NOT SO FAST
The Treasury Department may face a fight in Congress over its funding for a telecom contract. PAGE 5

IN TRANSITION
Finding himself between jobs, IT exec Michael H. Hugos faces up to the need to reinvent himself. PAGE 21

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JANUARY 16, 2006 ■ VOL. 40 ■ NO. 3 ■ $5/COPY

Wireless Options Expand, Forcing IT to Be Flexible

Embedded 3G, WiMax technologies add to complexity of supporting mobile users

BY MATT HAMBLEN

IT managers are facing an increasingly complex array of wireless technology choices, with new offerings such as WiMax-certified devices and notebook PCs that have built-in support for third-generation networks adding to the options that IT has to evaluate and support.

This week, the Mountain View, Calif.-based WiMax Forum is expected to certify an initial group of products that comply with the emerging wireless specification, which was designed to deliver networking performance that's comparable to what Digital Subscriber Line and cable modem services provide.

Meanwhile, Lenovo Group Ltd. this month said it plans to develop a ThinkPad PC with

Wireless, page 51

Pharmaceuticals Slow to Meet Drug-Tracking Laws

BY HEATHER HAVENSTEIN

Pfizer Inc. last week unveiled plans to begin shipping its first drug product equipped with radio frequency identification tags to thwart theft and counterfeiting.

However, the company, along with many other drug firms, is still not prepared to meet the conditions of new legislation in two large states requiring that pharmaceutical firms trace prescription drugs as they move through the supply chain.

A new Florida law requires that by July 1, wholesale distributors operating in the state

Drug Tracking, page 51

INSIDE
Colorado is testing RFID tags on herds of elk. PAGE 8

NEWSPAPER

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Data Center Execs Aren't Jolted by Rising Utility Bills

Cite reliability of power supply as a bigger concern

BY PATRICK THIBODEAU

Utility costs are shooting up because of tight fuel supplies, and that could be bad news for data center owners, who sometimes pay for electricity by the megawatt.

The rising electricity costs may prompt some IT shops to become more aggressive about energy conservation and the adoption of systems that use low-power chips and variable-speed motors. But several data center managers said last week that energy costs aren't one of their biggest concerns and that the ongoing increases are unlikely to lead to a relocation of IT facilities to regions where power is less expensive.

Utility Costs, page 12

Purchasing Power

Select average electric rates in cents per kilowatt hour for commercial users as of September (the latest figures available).

Kansas	6.81
Massachusetts	13.13
New Jersey	11.69
North Carolina	7.01
Rhode Island	11.85
Texas	8.67
West Virginia	5.37

SOURCE: U.S. ENERGY INFORMATION ADMINISTRATION

Not So Fast!

SCOTT NIRADER

Companies are usually in such a rush to finish a project and move on to the next one that they fail to make sure the expected ROI is actually delivered. Learn how to milk a project for all it's worth. Page 37

Jason Glazier, CTO at Lincoln Financial Group, makes sure ROI doesn't slip off the radar screen after an IT project is completed.

How does Xerox Global Services manage millions of office devices for its customers? Their largest application runs on new SQL Server™ 2005 64-bit running on Windows Server™ 2003, which provides 99.999% uptime*. See how at **microsoft.com/bigdata**

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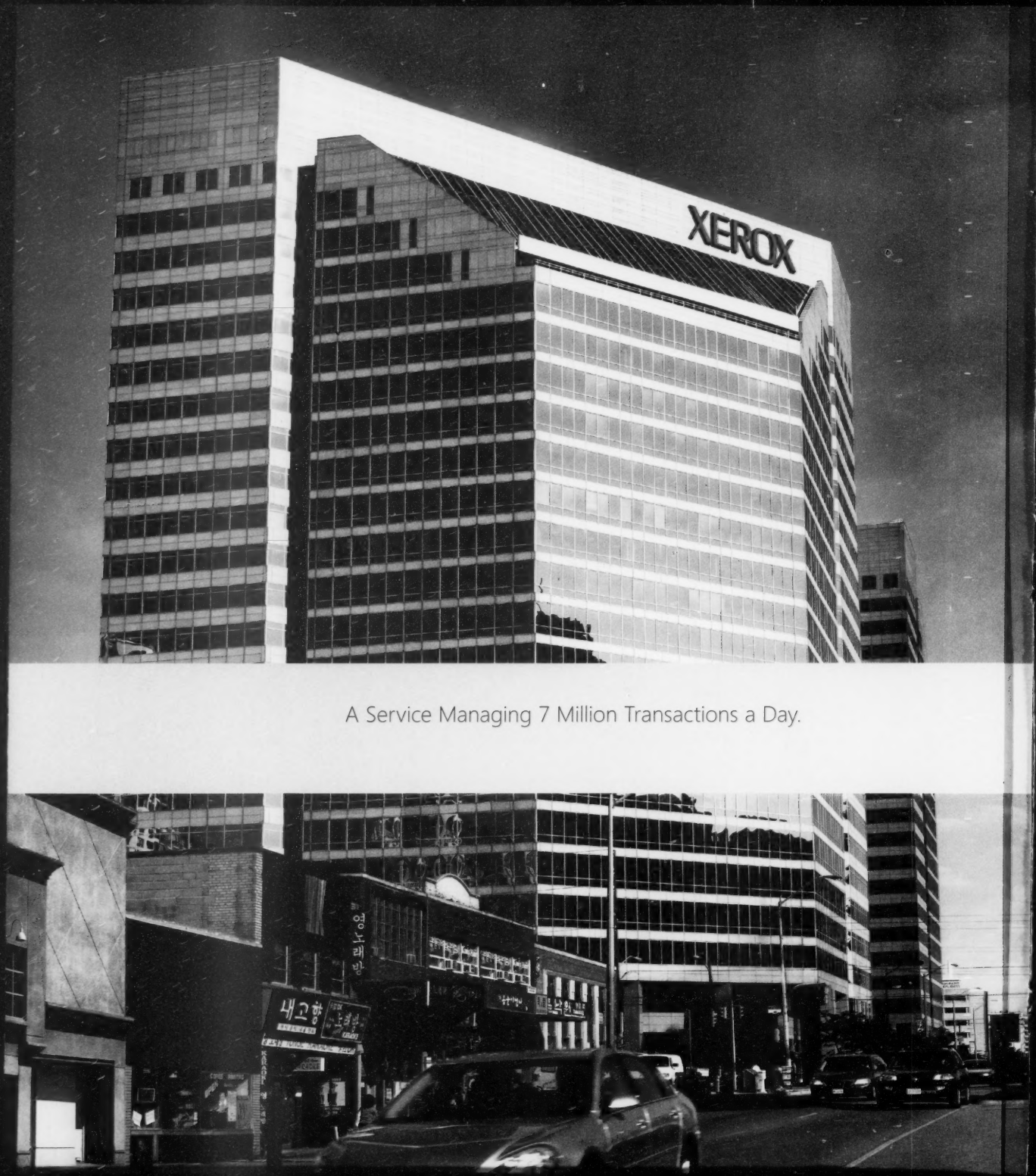

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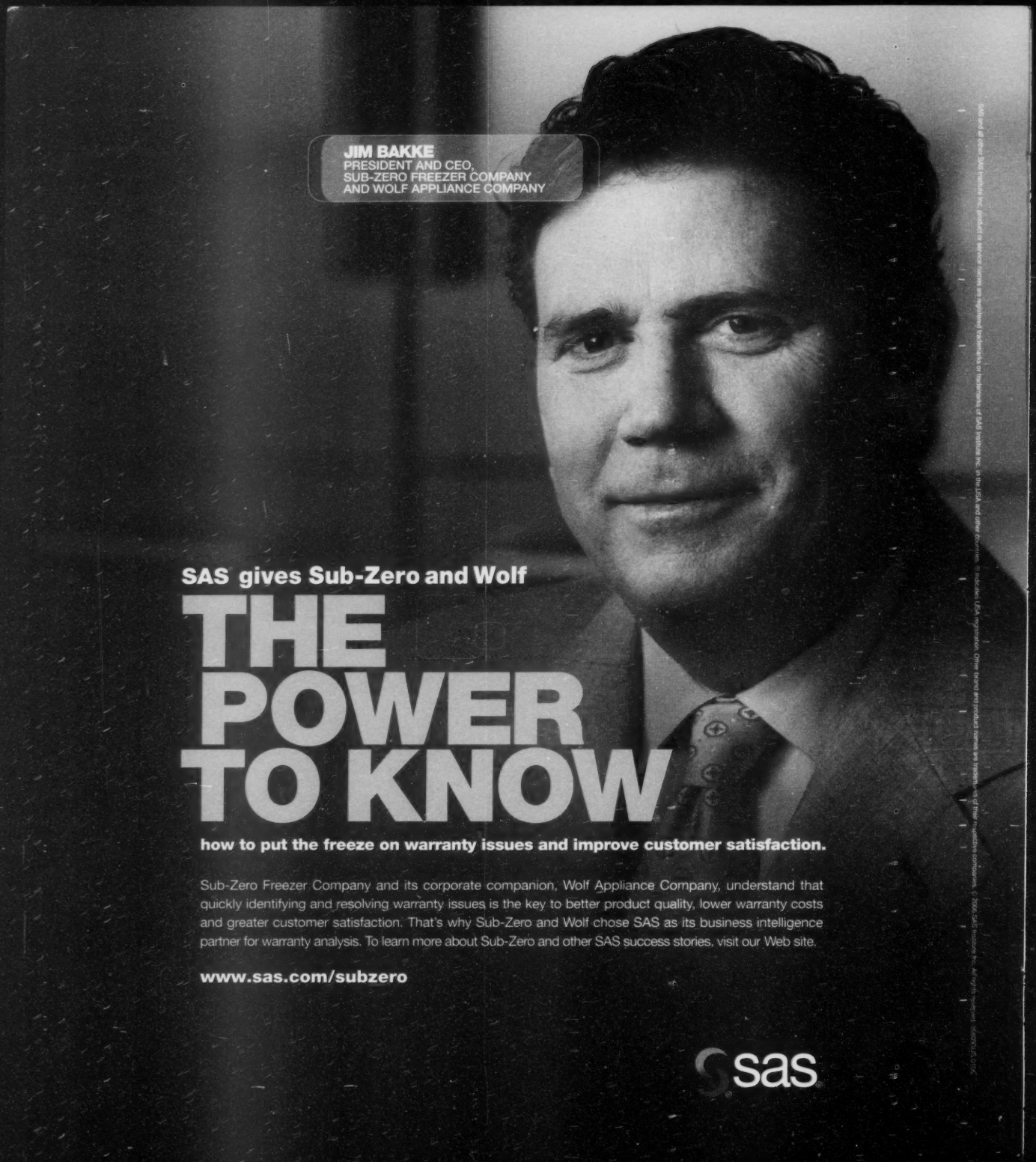

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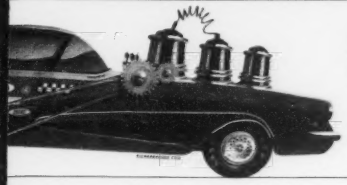

High-Speed Databases Rev Corporate Apps
In the Technology section: New high-performance database management systems are moving from market niches to big businesses looking for improved transaction speeds. **Page 23**

The Change Challenge
In the Management section: If you can't manage change, you can't manage IT, says IT Mentor Ken Karacsony. He's got some tips to help you guide your business through technology transitions. **Page 42**

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8 **Call center operations** become leaner as Outrigger Hotels & Resorts outsources support systems and ties back-end reservation applications to the Web so staffers can work from home.

10 Q&A: **Harris Miller**, who stepped down as president of the ITAA to run for the U.S. Senate, says he was "a little surprised" by Oracle's departure from the trade group in response to his campaign.

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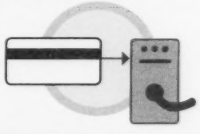

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46 **Bart Perkins** says you can outsource individual projects, but you should never abdicate responsibility for program management. He tells why you need to maintain accountability in-house and explains how to do it.

52 Frankly Speaking: **Frank Hayes** can tell you when a technology is obsolete — as long as he knows whose definition of *obsolete* to use.

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Computerworld TechCast

AUDIO: This podcast delivers summaries of key technologies and concepts every week. Listen to the five-minute programs on your iPod or through your Web browser. The first installments: service-oriented architectures and multicore chips. **QuickLink a7780**

Learn Monad

OPERATING SYSTEMS: In the first of a four-part series, Microsoft lead programmer Andy Oakley offers a detailed look at the next-generation MSH Windows Command Shell, including cmdlets, registry access and the passing of strongly typed data. Excerpted from the book *Monad* (O'Reilly Media Inc., 2005). **QuickLink a7790**

Your Guide to Mobile Management

MOBILE/WIRELESS: Columnist Yuval Kossovsky offers a checklist for IT managers who have been given the order to deploy mobile applications. **QuickLink a7770**

Five Key Securities Mistakes

SECURITY: Anton Chuvakin sorts through a list of errors that IT managers often make while trying to manage the rising tide of security vulnerabilities. **QuickLink a7810**

Apple's Big Day

MACINTOSH: Ryan Faas was on hand for Apple CEO Steve Jobs' keynote address at Macworld '06 in San Francisco and offers this overview of what Jobs had to say. **QuickLink a7820**

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AT DEADLINE

IBM Confirms SEC Probe Is Under Way

IBM has disclosed that the U.S. Securities and Exchange Commission is formally investigating its first-quarter 2005 earnings and equity compensation expenses. IBM had said in June 2005 that it was cooperating informally with the SEC regarding the matter. IBM changed its accounting practices and began counting employee stock options as an expense in that quarter.

Microsoft Issues Plan for XP Support

Microsoft Corp. has disclosed that it will continue to provide mainstream support for all flavors of Windows XP, including the Home and Professional editions, for two years after the release of Windows Vista. Vista, the successor to XP, is expected to ship late this year. The company quietly listed the new policies on its Web site last week. Microsoft had not previously disclosed its XP support plans.

Claflin Will Retire As CEO of 3Com

Bruce Claflin announced that he will retire as president and CEO of 3Com Corp. as soon as the networking technology vendor finds a replacement. Claflin joined 3Com in 1998 as president and chief operating officer. He will help in the search for his successor and will remain an adviser to 3Com for six months after the next CEO is hired.

Bank Customer Data Gets Lost In Transit

People's Bank in Bridgeport, Conn., has reported that a computer tape containing personal data on 90,000 customers was recently lost in transit. The tape contains the names, addresses, Social Security numbers and checking account numbers of those customers. It was bound for the TransUnion LLC credit-reporting bureau in Woodlyn, Pa., via United Parcel Service Inc. UPS wouldn't say when the tape was lost.

Data Analysis May Help LAPD Fight Terrorism

New system also targets organized crime and gangs

BY HEATHER HAVENSTEIN

THE LOS ANGELES Police Department's counterterrorism unit next month will begin using a new data-analysis system that's designed to identify and link related pieces of intelligence.

The new tools promise to help police deter and respond to terrorist attacks, officials said.

The LAPD Counter Terrorism and Criminal Intelligence Bureau will use the $1 million system to gather, track, analyze and distribute intelligence information, including tips and leads. It said it will also use the system to analyze data related to organized crime, gangs and money laundering.

The system is being built for the bureau by Memex Inc. and will include its data mining, analysis and visualization tools.

Connecting the Dots

The completed package will allow about 80 counterterrorism bureau officers to search multiple intelligence databases simultaneously, said Bob Fox, officer in charge of the analytical section in the major crimes division of the counterterrorism bureau. It will provide proactive notifications and e-mail alerts to officers when patterns are identified, he said.

"One of the criticisms in the 9/11 Commission's report is [that] agencies failed to connect the dots [and] bring pieces of information together that possibly would have prevented the 9/11 attacks," Fox said. "[Today] when somebody sits down at a computer and starts trying to check information, there are too many places to look."

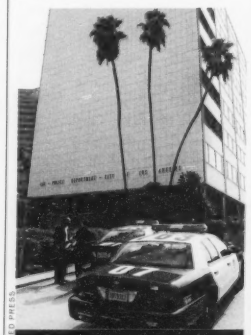
The new analysis tools, Fox said, can search multiple sources of information with a single search entry and determine whether "there are any linkages or connections to the information we are looking at."

Today, for example, if a citizen calls the department to report suspicious activity by a neighbor, officers have to search several different data sources for the person's name to see if he is in one of the department's databases, he said. "The more data sources you are required to look at, the more opportunity there is to miss something or forget something," Fox noted.

Kelly Harris, deputy executive director of The National Consortium for Justice Information and Statistics in Sacramento, said that many local law enforcement agencies are working to automate paper-based internal systems. She said the LAPD's new system will put it "ahead of the curve."

The consortium focuses on using IT to improve law enforcement and public safety.

Systems like the one the LAPD is installing will also become critical in creating regional systems for sharing information among law enforcement agencies, Harris added. Efforts to develop such systems are already under way in some states, she said.



THE ASSOCIATED PRESS

THE LAPD's new system will let officers check multiple sources of information with one search entry.

The Memex system includes a hybrid relational and open text search database paired with an intelligence engine that compresses data.

Those tools allow users who may not be sure where the data is housed to quickly search multiple databases simultaneously, said Mike Himley, general manager of Vienna, Va.-based Memex's western region.

Memex, which specializes in analysis tools for law enforcement and intelligence agencies, is installing a similar system for the Ohio Bureau of Criminal Identification & Investigation. That system is due to be completed during the first quarter.

In addition, New Jersey last year built a system for statewide information analysis using the Memex tools, and London's Metropolitan Police Service has been using tools from the company since 1993. ▸

Microsoft Patches Two Critical Flaws

BY JAIKUMAR VIJAYAN

As part of its monthly security update, Microsoft Corp. last week released software patches for two critical vulnerabilities in its products.

The more serious of the two flaws is a remote code-execution vulnerability affecting Outlook and Exchange Server. The problem involves the way the software decodes message-formatting instructions stored in the Transport Neutral Encapsulation Format (TNEF), which is used when e-mail is transmitted in the Rich Text Format.

The flaw could allow an attacker to gain complete administrative control of compromised systems, according to Microsoft. The company said in a security bulletin that the vulnerability could be triggered when an end user opens or previews a malicious e-mail message or when Exchange Server processes such a message.

What makes the TNEF flaw particularly dangerous is the fact that it doesn't require any action by users in order to be exploited, said Michael Sutton, director of VeriSign Inc.'s iDefense Labs unit in Reston, Va. "All that needs to take place is for an e-mail to get sent to a server," Sutton said.

But exploiting the flaw likely won't be easy, said Alain Sergile, technical product manager for the X-Force team at Internet Security Systems Inc. in Atlanta. "We think that from a software engineering perspective, it will be fairly complicated to exploit, but it is feasible," Sergile said.

The other flaw disclosed last week involves the way that Windows handles embedded Web fonts. Microsoft said attackers could exploit the vulnerability by constructing malformed Web fonts and then tricking users into visiting malicious Web sites or viewing specially crafted e-mail messages.

In a related matter, details of two new flaws in the way that Windows renders images in the Windows Metafile (WMF) format were posted on the Web. But security researchers said those vulnerabilities are far less serious than the one that Microsoft patched two weeks ago, ahead of its monthly update release.

"This is only getting any attention because it's WMF and Microsoft just released a WMF patch," said Russ Cooper, a senior information security analyst at Cybertrust Inc. in Herndon, Va., and editor of the NTBugtraq mailing list. ▸

Robert McMillan of the IDG News Service contributed to this story.

Feds Plan to Outsource Smart ID Card Systems

Governmentwide system must be in place by Oct. 27

BY JAIKUMAR VIJAYAN

Federal officials are looking to outsource the IT infrastructure that's needed to support a planned smart-card system for authenticating employees governmentwide. And the outsourcing plan makes sense, given the scale and complexity of the smart-card initiative, IT analysts said last week.

The U.S. General Services Administration (GSA) this month posted a brief document on its Federal Business Opportunities portal site clarifying requirements for outsourcing vendors seeking to deploy, operate and maintain the various systems needed for the smart-card program.

The outsourcing plan also includes business processes and covers functions such as employee registration, identity and card management, public-key infrastructure certification and card printing, according to the document.

The note updated a formal request for information, published on Dec. 13, in which the GSA asked outsourcing vendors to provide details on their ability to meet the implementation requirements of Homeland Security Presidential Directive 12.

Under HSPD 12, which is an unfunded mandate, all federal agencies are required to use smart cards to authenticate their employees for access to buildings and IT systems starting Oct. 27.

OUTSIDE INFLUENCE

The smart-card IT infrastructure that the GSA is seeking to outsource will support the following:

- Employee registration stations
- Identity and card management systems
- Public-key infrastructure technology
- Card-printing machines

Outsourcing Advantages

A decision to outsource the necessary infrastructure would significantly ease the compliance burden for individual federal agencies, said Gregg Kreizman, an analyst at Gartner Inc. "It is necessary, because they don't have the people or the skills to do it on their own," he said.

The sheer size of the IT deployment requires an outsourcing strategy, said Prabhat Agarwal, an information security consultant at Input Inc., a Reston, Va.-based firm that focuses on government procurement issues.

"You are talking about a massive approach that touches all agencies," Agarwal said. "Because of the scale of this venture, it is almost automatic that [the government] would go to the private sector."

The GSA didn't respond to a request for comment on its plans last week. But according to the documents posted on its portal, the agency is looking at a shared-services model under which multiple agencies would use a common infrastructure to issue and manage smart cards to their employees.

Each agency would be responsible for conducting background checks and determining the eligibility of employees to receive one of the Personal Identity Verification (PIV) smart cards.

Outsourcers would manage the IT infrastructure and the process of issuing and managing cards.

Outsourcing the smart-card systems is a good idea, but the work should be divided among multiple vendors, said Alan Paller, director of research at the SANS Institute, a security research and training firm in Bethesda, Md. He added that encouraging competition among vendors should provide service delivery benefits.

The Office of Management and Budget has already appointed the GSA as the governmentwide agent for acquiring products and services as part of implementing the HSPD 12 requirements. ▸

Congressman Fights Treasury's Plans for Telecom Contract

BY TODD R. WEISS

The U.S. Department of the Treasury's torturous effort to award a telecommunications contract valued at up to $1 billion could face another challenge: an attempt by an influential congressman to eliminate funding for the pact.

After arguing unsuccessfully for months that the Treasury Department is wrong to pursue a contract that's separate from an umbrella procurement program for federal agencies, the chairman of the House Government Reform Committee is threatening to take action in Congress.

Rep. Tom Davis (R-Va.) claims that piggybacking on the larger Networx contract, which is out for bid now, would save money, streamline the number of telecommunications vendors being used within the government and avoid a duplication of efforts.

Davis "is always against agencies stovepiping their own solutions when the whole point of IT is to make things smoother," said Robert White, a spokesman for the congressman. Mounting an effort to cut the Treasury Department's funding "is an option he would pursue" if the agency won't give up on the plan to go its own way, White added.

A spokesman for the Treasury Department declined to comment on the dispute. However, he said the agency expects to award the Treasury Communications Enterprise (TCE) contract in the spring.

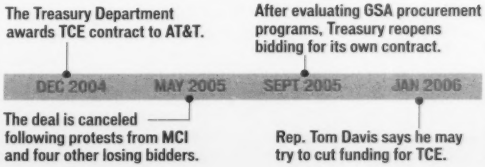
The agency initially picked AT&T Corp. as its TCE vendor in December 2004, structuring the contract as a three-year deal with seven optional one-year extensions. But the contract was canceled six months later after the Government Accountability Office upheld protests from losing bidders.

At that point, the Treasury Department said it would choose a vendor through the General Services Administration's framework of telecommunications contracts. But last September, the agency again put the TCE contract out for bid after deciding that the GSA's procurement programs wouldn't meet its needs.

Networx, the program that Davis wants the Treasury Department to use, will replace the government's existing FTS2001 telecommunications contract, which will expire next year. The GSA is expected to award the main portion of the Networx contract next summer, choosing from among four teams of vendors that submitted bids in October. ▸

PROCUREMENT PROBLEMS

Major developments in the Treasury Department's effort to find a telecommunications vendor:


The Treasury Department awards TCE contract to AT&T.
After evaluating GSA procurement programs, Treasury reopens bidding for its own contract.
DEC 2004
MAY 2005
SEPT 2005
JAN 2006
The deal is canceled following protests from MCI and four other losing bidders.
Rep. Tom Davis says he may try to cut funding for TCE.

DHS Funds Effort To Find Flaws in Open-Source

THE U.S. DEPARTMENT of Homeland Security is funding a $1.24 million project that is designed to improve the security of open-source software.

The plans calls for source-code analysis vendor Coverity Inc. and Stanford University to build and maintain a publicly available database of the bugs they find in more than 40 open-source technologies, including Linux, FreeBSD, Apache, Mozilla and MySQL.

San Francisco-based Coverity said the database will include information gathered from automated daily scans of the open-source software using its Prevent code-analysis tool. Registered users should be able to access the database from Coverity's Web site starting in about three months.

Security vendor Symantec Corp. will help analyze the results of the scans. Stanford will get $841,276 from the DHS over the next three years, while Coverity and Symantec will receive $297,000 and $100,000, respectively.

Dawson Engler, a computer science professor at Stanford, said the DHS's Open Source Hardening Project should produce a more formal approach for finding bugs in open-source code. "The commercial side is using all the automated tools they can to find bugs in their products," he said. "You don't see the same kind of effort on the open-source side."

The goal is twofold, said Rob Rachwald, director of marketing at Coverity. First, government officials are "seeing an increased use of open-source, and they want to harden the code," Rachwald said. Second, he added, the database is designed to give the open-source community improved access to bug information so developers can make the products they're working on more secure.

– JAIKUMAR VIJAYAN

BRIEFS

Massachusetts Names Acting CIO

The state of Massachusetts has named Bethann Pepoli as acting CIO as it seeks a permanent replacement for Peter Quinn. Quinn announced his resignation late last year after spearheading the state's initiative to move away from proprietary formats for storing government documents. Pepoli had worked closely with Quinn as chief operating officer for the state's IT division.

Virginia Awards CGI $300M Contract

The state of Virginia has signed a seven-year, $300 million IT contract with CGI-AMS Inc., a unit of CGI Group Inc., to consolidate and modernize enterprise applications used by the state government's executive branch. The price tag for the initiative, known as the Virginia Enterprise Applications Architecture project, could grow if the state exercises two three-year renewal options. CGI-AMS estimates that the state will save $125 million over the life of the contract.

CA to Resell Storage Management Tools

Computer Associates International Inc. has agreed to resell virtualization and data-protection tools from StoreAge Networking Technologies Inc. with its BrightStor storage management suite. CA said the StoreAge tools fill a gap in its storage-area networking product line.

Mercury to Buy Systinet for $105M

Mercury Interactive Corp. has agreed to acquire Systinet Corp., a provider of service-oriented architecture (SOA) software and services, for $105 million in cash. Mercury, which is trying to recover from accounting problems that led to the resignations of its CEO and other top executives in November, said it hopes the deal will boost its position in the SOA market. The two companies expect to complete the acquisition during this quarter.

ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL

MATTHEW FAULKNER

Microsoft's Project Cuts Hurt . . .

. . . the productivity of project managers while adding to IT complexity. So claims Marc O'Brien, CEO of Projity Inc. in San Mateo, Calif. His evidence? Not insubstantial. He points to Microsoft's decision to remove from its Project software the tree views of a project's tasks and resources — a feature that gives you a concise look at who's doing what with what. Microsoft nudges users who want that capability to add its Visio software, which means you need to bolt on Project Server so the two applications can work together, and then you have to integrate all that with Exchange. In other words, what was once a single app becomes an IT integration, um, project. Naturally, O'Brien offers an alternative — Project on Demand. POD, as Projity insiders call it, is a software-as-a-service offering that's compatible with Microsoft Project — and is its equivalent and more in functionality, he says. (For example, you get those tree views that Microsoft ripped out.) Now in beta, Project on Demand is due Jan. 30. A project manager has to shell out $39 a month, but team members only pay $7 on a monthly basis.

3rd Rank IT hiring managers gave project management skills in a *Computerworld* poll.

On-demand app offers real-time . . .

. . . planning engine for supply chains. The Mitrix Project was started in 2001 to help some of Mitsui & Co. (U.S.A.) Inc.'s more than 100 subsidiaries manage their supply chains without each having to invest in its own IT infrastructure. The project led to the creation of Mitrix Inc., a wholly owned Mitsui subsidiary in Irvine, Calif. Mitrix CEO Ed Lewis says that the unit's service, which is now available to the world, includes a planning engine that can instantly recognize changes in your supply chain and devise recommendations to compensate for them. By midyear, Mitrix plans to aggregate more data sources for improved forecasting and update its end-user dashboard. Although the service starts at $200,000 for the first year and goes for $75,000 annually thereafter, Lewis says that price is one-fifth to one-tenth of what it would cost to install and run supply chain management software in a data center.

LEWIS: The supply chain is ready for on-demand tools.

'Forget Madonna – the real rich . . .

. . . content searches are to happen in business." That's what Rimas Buinevicius predicts for the near future. "Rich media is coming of age in traditional organizations," says the CEO of Sonic Foundry Inc. in Madison, Wis. As proof, he suggests that you visit his company's Mediasite.com Web site, which links to more than 7,500 professional multimedia presentations available online. If you search on the word *CIO*, you'll get more than 11 hours of video and slide shows. Buinevicius says Mediasite's proprietary tools can index slide content via optical character-recognition technology. It's also possible to index audio streams and perform other "exotic" search functions on Mediasite, Buinevicius says. But he's cagey as to whether the indexing feature is fully functional now. In the future, Mediasite could be used on corporate intranets and extranets, he says.

BUINEVICIUS: Rich media has a future in business.

Centralize remote file services . . .

. . . without hurting local performance for end users? Now there's a wish held by many IT pros. Chris Williams, chief marketing officer at Expand Networks Inc. in Roseland, N.J., claims that it's possible with his company's Expand Accelerator appliance. Williams says the device optimizes WAN performance through advanced compression and quality-of-service techniques, and it caches files locally, sending only updates to the central repository. The appliance also includes a print server, so you don't have to support a separate one at remote sites. An upgrade due later this month will add support for voice-over-IP traffic. Pricing starts at $2,800.

The Expand Accelerator appliance centralizes files for remote users.

The hullabaloo over multicore chips . . .

. . . transcends Intel vs. AMD in servers. Multicore processors also will take a big bite out of the market for application-specific integrated circuits (ASIC) in embedded systems, predicts Hiro Kataoka, CEO of Boston Circuits Inc. His Burlington, Mass.-based start-up is designing multicore chips to replace the ASICs now found in everything from manufacturing robots to consumer electronics. Kataoka claims that his Grid on Chip devices are one-third the size of a Pentium 4 and can handle all manner of ASIC functions as well as the duties of a general-purpose PC chip. Plus, they'll be upgradable. "There will be an IP pipe to all these devices," Kataoka says, so you'll be able to get new capabilities without having to throw out your hardware. Developers will be able to get their hands on Boston Circuits' linker, compiler and debugger later this quarter. Expect Grid on Chip silicon sometime next year. ▸

KATAOKA: Multicore will reach the embedded market.

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Hotel Chain Takes New Tack on Call Center IT

Outrigger attempts to lower costs by outsourcing apps, enabling telework

BY PATRICK THIBODEAU

WILLIAM PETERS, vice president of reservation services at Outrigger Hotels & Resorts in Honolulu, is at the apex of two big IT trends.

First, his company last year outsourced IT services for a small part of its operations — some call center applications. Now Peters is testing a program that could allow all of his 55 call center employees to work from home.

Peters said last week that if both initiatives go as planned, he thinks he can reduce the cost of booking and processing a reservation by about 35% for Outrigger Hotels. The chain is a division of Outrigger Enterprises Inc., which operates 51 hospitality properties throughout the Pacific Rim.

Not an Easy Choice

Outsourcing wasn't an easy step for Outrigger, Peters said. He spent more than 18 months researching his options before hiring Echopass Corp., a Pleasanton, Calif.-based application service provider (ASP) that hosts call center technologies for the hotel chain's reservation systems.

Peters said the outsourcing move has allowed the company to eliminate some in-house functions, such as live-chat administration duties that are now handled by Echopass. "The ASP models have really come into their own," he said.

OUTRIGGER HOTELS in Honolulu is looking to reduce booking costs.

Outrigger's use of an outsourcing vendor for a single IT process mirrors a broader shift away from large, comprehensive IT services deals, according to a report issued last week by Technology Partners International Inc. Increasingly, users are opting to outsource limited operations, such as their help desks, said Peter Allen, managing director at Houston-based TPI.

In its report, the research firm said 293 outsourcing contracts valued at $50 million or more were awarded worldwide last year, up from 269 in 2004. Despite the increase in the number of such deals, TPI said the total value of commercial outsourcing contracts declined to $75 billion last year, down from $78 billion.

The drop-off was a result of savings from contract restructurings and terminations and the trend toward smaller contracts, Allen said.

Through telecommuting, Outrigger hopes to lower costs by making it easier to add part-time call center workers during busy periods, Peters said. In addition, the company expects that the ability to work at home will help reduce employee turnover rates.

Since November, Outrigger has had four employees working from home on PCs that can be used only for call center work. By next year, Peters wants to be able to offer work-at-home options to all of Outrigger's call center employees, once legacy applications running on back-end systems can be accessed via the Web.

Nationally, there were about 112,000 home-based customer service representatives working for call center services firms last year, IDC analyst Stephen Loynd said in a report released this month. That figure should increase by about 20% annually, he predicted.

Although IDC tracks call center workers only in the outsourcing market, Loynd said he thinks that companies with internal call center staffs are providing home-based work options at similar levels. ▸

Colorado Hopes RFID Can Protect Elk Herds

Tests continue using passive and active tags

BY MARC L. SONGINI

The state of Colorado is testing radio frequency identification (RFID) tags to see if they can help protect elk herds from contagious diseases.

Working with three ranchers and an animal-tracking vendor, the state last month wrapped up a pilot test that involved tracking 130 animals using passive RFID tags.

The state will start a second test in March that uses active RFID tags, which should extend the tracking range, said Scott Leach, a field investigator at the Colorado Department of Agriculture.

If the tests are successful, the state hopes to use RFID technology to help track animal diseases, including chronic wasting disease (CWD), a degenerative neurological illness endemic in Colorado and some other states.

CWD is viewed as a very serious threat to both captive and wild elk and deer. The state wants to use an automated system to track and isolate any CWD outbreaks.

Implementing an RFID tracking system could be an essential part of any effort to protect the elk population, said Myrna Hansen, co-owner of the Top Rac Elk Ranch in Fort Collins, Colo., which took part in the state's recent test.

Such a system could verify whether a herd had been exposed to the disease, which could mean the difference between destroying or saving the animals, she said.

Meeting U.S. Standards

Leach said the state is using the tests to see how the RFID tags work and to ensure that any system selected for the job meets federal National Animal Identification System (NAIS) specifications.

The U.S. Department of Agriculture launched the NAIS in 2003 as a way to set standards for automating the tracking of animals infected with so-called mad cow disease and other illnesses.

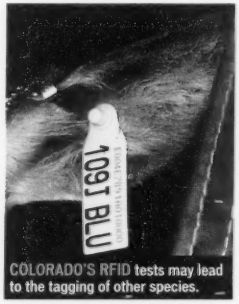
Leach said Colorado will likely extend those specifications to ensure that the RFID tags are affordable to ranchers and can track animals over a wide area without causing them injury.

Although the state is still evaluating the technology, Leach said RFID is clearly becoming its preferred tagging method. If the tests do determine that the RFID tracking system works well for elk and deer populations, the state may decide to use the technology for tracking other species, such as range cattle, he said.

The state began the RFID testing process in late 2004. A herd of 130 elk were tagged in the pilot rollout using a passive identification system from Calgary, Alberta-based Advanced ID Corp.

According to Leach, the pilot went well, with handheld readers able to get test results from the elks' ear tags from a distance of up to eight feet.

But the test did determine that few animals came within range of scanners, thus prompting the plan to launch the second pilot using active tags. Leach said no vendor has yet been selected to supply the active RFID chips, which can send out signals at set intervals instead of having to be scanned. ▸



COLORADO'S RFID tests may lead to the tagging of other species.

Group Formed to Manage Livestock Data

THE NEWLY FORMED U.S. Animal Identification Organization (USAIO) has assumed oversight of a database that will store information on all livestock in the U.S.

The agribusiness-sponsored group was established last week to speed the implementation of the comprehensive database, which the National Cattlemen's Beef Association (NCBA) started building last July. The latter group supports the change in ownership.

A pilot database, which uses tracing software from ViaTrace LLC, will be rolled out by the USAIO later this month, said Rick Stott, a member of the NCBA's animal identification commission and a USAIO director. Stott is an Idaho-based beef producer.

He said the system will allow ranchers to enter relevant data via a spreadsheet or through XML formatting to the system's Web site. Data on the animals will be gathered using RFID and bar-code technology.

The database will initially be housed at ViaTrace's South Burlington, Vt., headquarters, until the USAIO finds an alternate host site, said Stott. The new group plans to hire a CEO and a CIO within six months to manage the project.

– MARC L. SONGINI

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BRIEFS

McAfee CEO Resigns To Join Websense

Gene Hughes has resigned as president and CEO of McAfee Inc. to become CEO of Websense Inc., where he will help expand its security business. His McAfee team will now report to Chairman and CEO George Samenuk. Hodges will oversee Websense's business strategy and all of its day-to-day operations. At Websense, he succeeds John Carrington, who will continue at as executive chairman of the board.

CA Buys Automated Support-Tool Maker

Computer Associates International Inc. has acquired Control-F1 Corp., an IT support automation software maker in Calgary, Alberta, for an undisclosed sum. Control-F1's SupportBridge products can automatically detect, prevent and repair end-user computer problems. Based on an earlier agreement, Control-F1's tools are interoperable with CA's Unicenter Service Desk software.

Novell Open-Source AppArmor Debuts

Novell Inc. has unveiled AppArmor, an open-source project aimed at improving Linux application security. The project is based on Novell's AppArmor application security framework, which the company is donating to the project. The AppArmor framework uses security profiles to protect Linux and applications running on it from external or internal security threats.

Actuate Purchases Performance Tools

Actuate Corp. has acquired performance management vendor Performancesoft Inc. for $16.5 million. Actuate, a maker of enterprise reporting tools, said it plans to combine the performance management and scorecard software from Performancesoft with its reporting tools. The combined tools could help companies extend corporate performance management efforts beyond the executive suite.

Former ITAA President Making A Bid for Virginia Senate Seat

Discusses reasons for running, Oracle decision to drop out of trade group

BY TODD R. WEISS

HARRIS Miller was president of the Information Technology Association of America trade group in Alexandria, Va., for more than a decade until he stepped down this month to seek the Democratic nomination for a U.S. Senate seat in Virginia. Miller, 54, ran unsuccessfully for Congress in 1984. He spoke last week with *Computerworld* about his new plan to run for public office and Oracle Corp.'s decision to drop out of the ITAA in response.

What motivated you to run for the Senate? My concern about the future. That's really why I was at the ITAA, because I'm perceived as a visionary who's looking ahead. I don't see a good future for our country when we're running unbelievably massive deficits, when we're relying on investment from China.

We've fallen into 17th or 18th in the world in science and math scores for our students. We're cutting student loans. Our country is sixth in the world in research and development investment per capita. I'm just afraid the country has gone off track.

Since you're coming from the ITAA, will technology issues be a key part of your campaign platform? I'm running to talk about how you cannot have a technological revolution without investing in people. In fact, cutting college student loans, which is what Congress is looking to do, is actually going backward. You can't have technology without skilled people. You can't have technology without investment.

When your plans became public, Oracle announced that it was leaving the ITAA because you're going to be taking on Republican Sen. George Allen, who is seen by Oracle as an established friend of the IT industry. What is your reaction to Oracle's move? I've always had a good relationship with the people at Oracle. They've been very active in the ITAA. I have no idea what [Oracle's departure] is all about. I was a little surprised by their comments.

So why are you taking on Allen, if he really is a friend of IT vendors? Allen has been part of the problem. He has the third-highest support scores for President Bush's policies among all U.S. senators. Clearly, he's interested in running for president. I'll be a full-time senator for Virginia.

As president of the ITAA, you said in the past that you opposed verifiable paper trails for e-voting systems. What is your stand on that issue as a candidate? I did oppose verifiable paper trails until about a year and a half ago. I was hearing from local registrars, including in Virginia, that they didn't want the additional burden for administration and maintenance that the paper trails would produce with printers and other equipment. But voters want it. It has more voter confidence.

My argument at the time was that if [a hacker] is smart enough to take over a [voting] machine and register someone's vote internally for the wrong candidate, they're also smart enough to make it look like the paper trail properly says who you voted for. People could get a false sense of security. ▸

Oracle Updates Financial Reporting Apps

Tools are aimed at aiding in corporate compliance efforts

BY MARC L. SONGINI

Oracle Corp. has upgraded a pair of tools designed to improve companies' ability to comply with the Sarbanes-Oxley Act and other financial regulations.

The new versions of the Internal Controls Manager and Financial Consolidation Hub products, both of which sit on top of Oracle E-Business Suite 11i, include new support for financial data aggregation and analysis via new dashboard interfaces.

Both updated products could prove useful at Loral Space & Communications Inc., a New York-based satellite manufacturer, according to CIO and compliance officer Barry Goldfeder.

The company runs the current version of Internal Controls Manager with the Oracle E-Business Suite 11.i.10 financial software and other ERP applications. The updated product's new prebuilt financial reporting templates could improve Loral's certification processes, Goldfeder said, noting that its ability to export reports directly to external auditors can save time.

New features in the Hub offering, including a dashboard interface, are generating interest from Loral, Goldfeder said. The dashboard would allow Loral executives to instantly gather information from any line of business, Goldfeder said.

Internal Controls Manager helps executives and managers document and test internal financial-control processes and monitor legal compliance. The Financial Consolidation Hub cleanses data from disparate sources and provides a single, global view of a company's finances.

Integration Features

The updated versions allow the tools to be linked together to create a single platform for reporting and compliance certification — a key feature, according to Kathleen Wilhide, an analyst at research firm IDC.

The ability to integrate the tools will deliver a "more focused approach to financial compliance that is sustainable and cost-effective," she said.

The new version of the Controls Manager tool can now use the analytical capabilities of Oracle's Daily Business Intelligence capabilities, said Folia Grace, vice president of financials application marketing at Oracle.

The Controls Manager software also adds 20 prebuilt templates to assist in internal reporting. Company auditors can use the templates to quickly craft reports in PDF format, which could shorten the auditing process.

Internal Controls Manager Version 5 will ship later this year.

Enhancements to Financial Consolidation Hub will allow financial personnel to see consolidated data and rapidly identify a given process, such as order to cash, and see any associated financial reporting risks, said Grace.

Financial Consolidation Hub Version 2 is available now. ▸

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Going Virtual Cuts Costs At Palm Beach College

$1.6M project has also eased system management

BY LUCAS MEARIAN

PALM BEACH Community College is going virtual: virtual servers, virtual network and virtual storage.

The college, which has 49,000 students and 2,000 employees, has nearly completed the rollout of a server and storage consolidation project that will replace scores of servers with a new mainframe and two blade systems.

Though not yet complete, the $1.6 million project has already allowed the school to reallocate its 60-person IT staff and cut data backups from 24 hours to just five.

Late last year, the school began the effort to replace a high-end IBM H50 mainframe, 70 Dell Intel-based servers and other hardware with IBM BladeCenter blades running EMC Corp.'s VMware virtualization software and a zSeries 890 server, according to Tony Parziale, CIO at Palm Beach Community College.

Since the project began, Parziale has cut $30,000 in monthly H50 proprietary software licensing costs. The new zSeries server runs five Linux partitions that consolidate the college's financial, human resources and facilities management applications, as well as its entire student registration and tuition system.

Parziale has also replaced an IBM Enterprise Storage Server, or Shark, array with a midrange DS6800 TotalStorage array running IBM SAN Volume Controller (SVC), which aggregates data from multiple disk systems into a 10TB data pool. Connected to the SAN, an IBM BladeCenter runs Tivoli software for data backups.

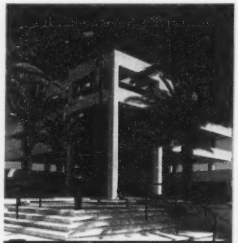
Prior to the server and storage consolidation, the H50 mainframe ran Palm Beach Community College's ERP system, and the Shark was the cornerstone of a SAN.

Data Loss Concerns

Charles King, principal analyst at PundIT Inc. in Hayward, Calif., said that although virtualization technologies such as VMware and SVC are mature, enterprises have been dragging their feet about turning to the technology for fear of data loss.

The Palm Beach Community College virtualization project is even rarer than most, King said, because technology from two vendors is being used together across a single infrastructure. Taking "relatively disparate products and [putting] them together in creative ways seems to me to say virtualization is finally here," he said.

Parziale said implementing VMware on his servers and IBM's SVC virtualization appliance in front of new Fibre Channel switches from Brocade Communications Systems Inc. has created some "territorial issues," including user resistance to having to ask for increases in storage volumes. But the savings far outweigh the push-back, he said.



PALM BEACH Community College cut data backups from 24 hours to five.

Parziale hasn't calculated ROI on the project because most of the old equipment was at its end of life. However, he said the project has greatly reduced workloads and eased management headaches.

Virtualization has helped free up the IT staff's time for strategic initiatives like building the college's distance-learning program and scanning paper documents into the storage network. The latter effort is intended to help safeguard important information in the event of severe weather, which often hits southern Florida.

"Also, we're always in a situation where we're looking for new staff," Parziale said. "This gave us the opportunity to reallocate our staff into other departments. The virtualization and dynamic allocation just makes it easier. There are a lot of things you don't have to worry about anymore."

Continued from page 1

Utility Costs

Baltimore-based Thomson Prometric, a testing and assessment services firm that is part of The Thomson Corp., is moving its data center. But the new facility will be located just three miles from the existing one because the company doesn't want to lose its IT workers, said Bob Williams, who runs the data center.

The monthly electric bill to run Thomson Prometric's 1,000-server data center is about $15,000. Williams said he's concerned about possible rate increases that could follow deregulation efforts in Maryland and the recent purchase of the main Baltimore utility by Constellation Energy Group Inc. in Juno, Fla. But he said other issues, such as the reliability of power supplies, are more important.

"The cost [of electricity] is one thing," Williams said. "But an outage is devastating and will cost me a lot more than the increase in energy costs."

Bill Hunter, data center manager at a telecommunications company in the state of Washington that he asked not be identified, said the most important factors in locating data centers are environmental issues — such as the risk of earthquakes, tornadoes or hurricanes — and the availability of reliable power, sufficient water supplies and skilled labor.

Large companies with data centers on the order of 100,000 square feet can try to curb energy cost increases by negotiating their own rates, Hunter said. He added that there are other things data center managers can do to control electricity costs, such as using cooling pumps with variable-frequency drives that work only as needed.

> **"The cost [of electricity] is one thing. But an outage is devastating and will cost me a lot more than the increase in energy costs."**
>
> **BOB WILLIAMS,** DATA CENTER MANAGER, THOMSON PROMETRICS

Users in the Northeast, in particular, are seeing big energy-cost increases. In Connecticut, for instance, electric rates for both commercial and residential customers have so far risen more than 17% this month — and they're scheduled to go up by another 5% in April.

Electricity costs vary widely depending on fuel sources, with customers in states that rely on natural gas typically paying the most, according to Robert Burns, a senior research specialist at the National Regulatory Research Institute at Ohio State University in Columbus. For instance, power costs have always been high in the Northeast because of the region's dependence on fuel supplies from elsewhere.

Connecticut officials believe that the state's higher rates "are right in line" with increases elsewhere in New England, said Beryl Lyons, a spokeswoman for the Connecticut Department of Public Utility Control in New Britain.

"I don't care where you go — the price of generating electricity has gone through the roof because for the most part, it uses fossil fuels," Lyons said. "There wasn't anything we could do on this one."

Nationally, electric costs are projected to go up about 8% this year, Burns said. The states seeing the smallest increases are those in the northern Midwest, where coal-fired plants generate much of the electricity.

Energy spending tends to account for a relatively small percentage of overall IT budgets, said Frank Scavo, president of Computer Economics Inc. in Irvine, Calif. Facility costs and infrastructure maintenance expenses, including the cost of power, typically amount to only about 4% of a company's IT budget, he said.

For a company that's in the process of deciding where to locate or relocate a data center, "electrical costs could be a factor in choosing one location over another," Scavo said. But, he added, "I would say that the reliability of the power supply would be more of a concern than cost is."

Scott Good, technologies director at Gilbane Building Co.'s regional headquarters in Lawrenceville, N.J., offered a similar view.

"I don't think [utility costs are] a major factor," said Good, who is also president of the Philadelphia, New Jersey and Delaware chapter of AFCOM, an association for data center managers. "There are just too many companies out there that are basing their business model on where [power supply] reliability, the people and the systems are rather than on the cost associated with keeping those systems online."

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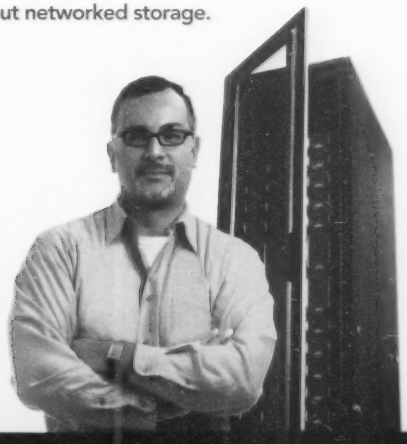

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GLOBAL DISPATCHES

An International IT News Digest

Microsoft to Work on Cryptography in India

BANGALORE, INDIA

MICROSOFT CORP.'S research unit last week said it plans to set up a cryptography group at its lab here as part of an effort by the company to upgrade its offerings in areas such as basic computer security and media rights management.

Rick Rashid, senior vice president of Microsoft Research, said the organization also has a cryptography group in Redmond, Wash., that has contributed key security technologies to Windows and the company's Office applications.

The Indian lab will develop cryptographic routines, such as encryption, decryption and authentication algorithms, and it will analyze and try to break existing algorithms, said Ramarathnam Venkatesan, a senior cryptography researcher who works in Redmond.

Microsoft Research India also will focus on creating cryptography capabilities for devices such as mobile phones and radio frequency identification tags that don't have the same level of computational resources as PCs do, Venkatesan said.

■ JOHN RIBEIRO, IDG NEWS SERVICE

GLOBAL FACT

18%

Projected compound annual growth rate of broadband services revenue in Australia.

SOURCE: PYRAMID RESEARCH LLC, CAMBRIDGE, MASS.

Two UMC Execs Quit Posts After Indictment

HSINCHU, TAIWAN

ROBERT TSAO and John Hsuan, who until last week were two of the top executives at United Microelectronics Corp. (UMC), have been indicted in Taiwan over alleged illegal investments in Chinese semiconductor company He Jian Technology (Suzhou) Co.

News of the indictment, which was handed down by the Hsinchu District Prosecutor's Office, came hours after UMC announced last Monday that Tsao and Hsuan had resigned as its chairman and vice chairman, respectively.

However, the two executives were named special advisers to the contract chip maker and will still be allowed to attend meetings of its board.

Late last month, Tsao announced that he planned to leave UMC in March in an attempt to relieve what he said was "unwarranted pressure" being exerted on the company by the Taiwanese government, which carefully controls investments in Chinese chip-manufacturing operations.

UMC last week said CEO Jackson Hu would take over as chairman immediately, instead of waiting until March.

■ SUMNER LEMON, IDG NEWS SERVICE

Oracle Plans to Expand Its Workforce in India

MUMBAI, INDIA

ORACLE CORP. last week announced plans to increase its workforce in India to about 10,000 people over the next eight months, up from the current total of 8,600.

Charles Phillips, one of Oracle's co-presidents, said at the company's Oracle OpenWorld conference in Mumbai that new staffers will be added in sales and marketing, product development, consulting, product support and services.

Oracle currently has about 6,000 database customers and 400 applications users in India, said Derek Williams, executive vice president of the vendor's Asia-Pacific division. ▸

■ JOHN RIBEIRO, IDG NEWS SERVICE

Compiled by Mike Bucken.

Briefly Noted

Sage Group PLC, a software vendor in Newcastle, England, last week said it plans to acquire Verus Financial Management Inc. in Nashville for £184 million ($324.6 million U.S.). Verus has about 101,000 small and midsize business customers. Sage plans to link its accounting software with Verus' payment-processing services.

■ JEREMY KIRK, IDG NEWS SERVICE

Nokia Corp. in Espoo, Finland, and Kyocera Corp. in Kyoto, Japan, have signed a cross-licensing agreement, ending a 2-year-old series of patent disputes related to cell phones. Nokia and Kyocera said the deal covers phones and add-on modules made by both companies and resolves all litigation between them.

■ MARTYN WILLIAMS, IDG NEWS SERVICE

GeoTrust Inc., a developer of enterprise authentication products in Needham, Mass., has acquired TC TrustCenter AG, a smart-card vendor in Hamburg, Germany. TC TrustCenter, which has about 50 employees, had been in receivership for several months. The terms of the deal weren't disclosed.

■ ROBERT MCMILLAN, IDG NEWS SERVICE

Hosted Apps Lift Online Charitable Donations

Emerging Web-based tools also aid communication with supporters

BY ERIC LAI

Many charitable organizations and nonprofit groups credit new Web-hosted fundraising management applications for improving their communications capabilities and increasing online donations.

For example, the Rainforest Action Network has turned to a hosted application delivered by Berkeley, Calif.-based GetActive Software Inc., and its online donations in December 2005 were three times higher than they were in December 2004, said Japhet Els, the nonprofit group's online organizer.

Els said the GetActive offering includes powerful tools for keeping in touch with the San Francisco-based environmental group's 34,000 donors and activists and helping them organize events and campaigns.

While direct mail appeals still raise the vast majority of the group's $3 million annual budget, Els said online tools offer other advantages. "It is tree-free giving," he said. "We can practice what we preach."

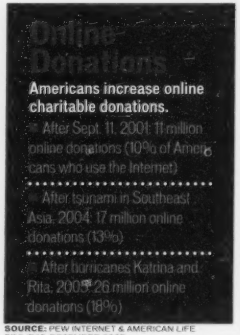
In the middle of last year, Heifer Project International, a Little Rock, Ark.-based charity fighting third-world hunger, switched to fundraising software hosted by Kintera Inc. after dropping another provider of hosted software that it declined to name.

San Diego-based Kintera's offering allowed Heifer International to create an online gift registry so that people could send friends and family a list of suggested donations and birthday or holiday gifts.

Kintera also helped Heifer put up video clips on its Web site of villagers receiving cows and other farm animals paid for by donor contributions.

While Heifer International is still tallying its 2005 contributions, it expects total online donations to have grown "in the double digits" over the 2004 online total of $15 million, said Mike Matchett, director of marketing. Online donations accounted for about a fifth of the group's 2004 total contributions, he said.

Web-hosted systems such as those offered by Kintera, Convio Inc. and GetActive typically combine the features of a database, a content management system and customer relationship management software with an all-in-one front end customized for nonprofits.


Online Donations
Americans increase online charitable donations.
After Sept. 11, 2001: 11 million online donations (10% of Americans who use the Internet)
After tsunami in Southeast Asia, 2004: 17 million online donations (13%)
After hurricanes Katrina and Rita, 2005: 26 million online donations (18%)

SOURCE: PEW INTERNET & AMERICAN LIFE PROJECT, DECEMBER 2005

More than 8.6 million U.S. households donated more than $3 billion online to organizations in 2004, up 50% from 2003, according to a study by Kintera and San Diego-based Luth Research Inc.

Before 2005, most charities reaped no more than 5% of their total donations online, estimated Charlie Hunsaker, president of West Chester, Pa.-based RI Arlington, a technology consultant to nonprofits.

Hunsaker expects many charities to report that online donations made up 10% to 15% of their total intake for 2005.

Many nonprofits still rely heavily on large philanthropic gifts or foundation grants, said Hunsaker, while others depend on field workers and volunteers who keep donor lists on index cards or in simple Excel spreadsheets and are often loath to share their donors with a central database.

Those factors — which are cultural issues peculiar to nonprofits — could slow growth in online donations. ▸

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Retailer Hopes for Oracle-Siebel Integration

BY MARC L. SONGINI

The closing of Oracle Corp.'s purchase of Siebel Systems Inc., expected later this month, could prove to be a boon for Select Comfort Corp.

The Minneapolis-based mattress retailer, an Oracle ERP shop, will be rolling out Siebel's business intelligence software next week and hopes that Siebel's new owner will move quickly to integrate Siebel's BI tool with its own ERP applications, said Select Comfort CIO Mike Thyken.

The Siebel tools that Select Comfort plans to use are designed to deliver alerts and dashboard capabilities to show how the company's 400 stores are performing in real time.

Although Select Comfort purchased the Siebel software before the vendors agreed to the acquisition, Thyken called the merger "a perfect fit from our standpoint."

The mattress company, an Oracle customer since 1998, uses that vendor's E-Business Suite 11i financial, human resources and manufacturing applications.

Now Select Comfort plans to deploy Siebel Business Analytics to some 2,500 users companywide by 2008. The retailer expects that 1,300 employees will be using the software by the end of this year.

David Dobrin, an analyst at B2B Analysts Inc. in Cambridge, Mass., said Select Comfort will likely have to wait a while for a strong link between the products. Integration "will take years and years, and probably Oracle will have to do a major revision to [its] data systems," he said.

Consolidated System

The Siebel system that Select Comfort is rolling out will take multichannel internal and partner customer information feeds via XML, flat-file and electronic data interchange formats, Thyken said.

The consolidated data will be used to study trends involving customer activity, he said. Moreover, the application will let nontechnical users analyze data by store or geographical region, he added.

Currently, Select Comfort uses a Cognos-based customer data warehousing system; that will be phased out in favor of the Siebel software, which Thyken described as more intuitive.

When the system is fully installed, the retailer will be able to aggregate customer activity data with human resources and plant operations and other data. Thyken did not disclose the cost of the installation.

Until Oracle offers tight integration between its own ERP applications and Siebel's software, Select Comfort will rely on Informatica Corp.'s extract, transform and load technology for data-sharing between the applications.

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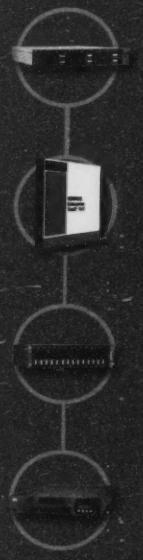

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Starwood Checks In With Object Database for Reservations

BY ERIC LAI

Checking rates online for a room at a Sheraton or Westin hotel is no longer a finger-drumming experience, thanks to a new reservation system that uses an object database.

Starwood Hotels & Resorts Worldwide Inc., which owns the hotel chains, is in the midst of a project to embed the ObjectStore database from Progress Software Corp. into a suite of internally developed rates and availability applications to improve the performance of and add features to its reservation system.

The partially completed project has already yielded performance improvements, officials said.

For the past year, Starwood — which also operates the W, Le Meredien, St. Regis and Four Points hotel chains — has been slowly offloading the rates and availability system from an aging mainframe, said Song Park, director of pricing and availability technologies at Starwood's headquarters in White Plains, N.Y. The distributed applications are running on Linux servers, he said.

The company will soon begin embedding Version 6.3 of ObjectStore, which boasts faster Java and C++ performance, into the application.

The full project is expected to be completed by the end of this year, Park said.

Performance Enhancer

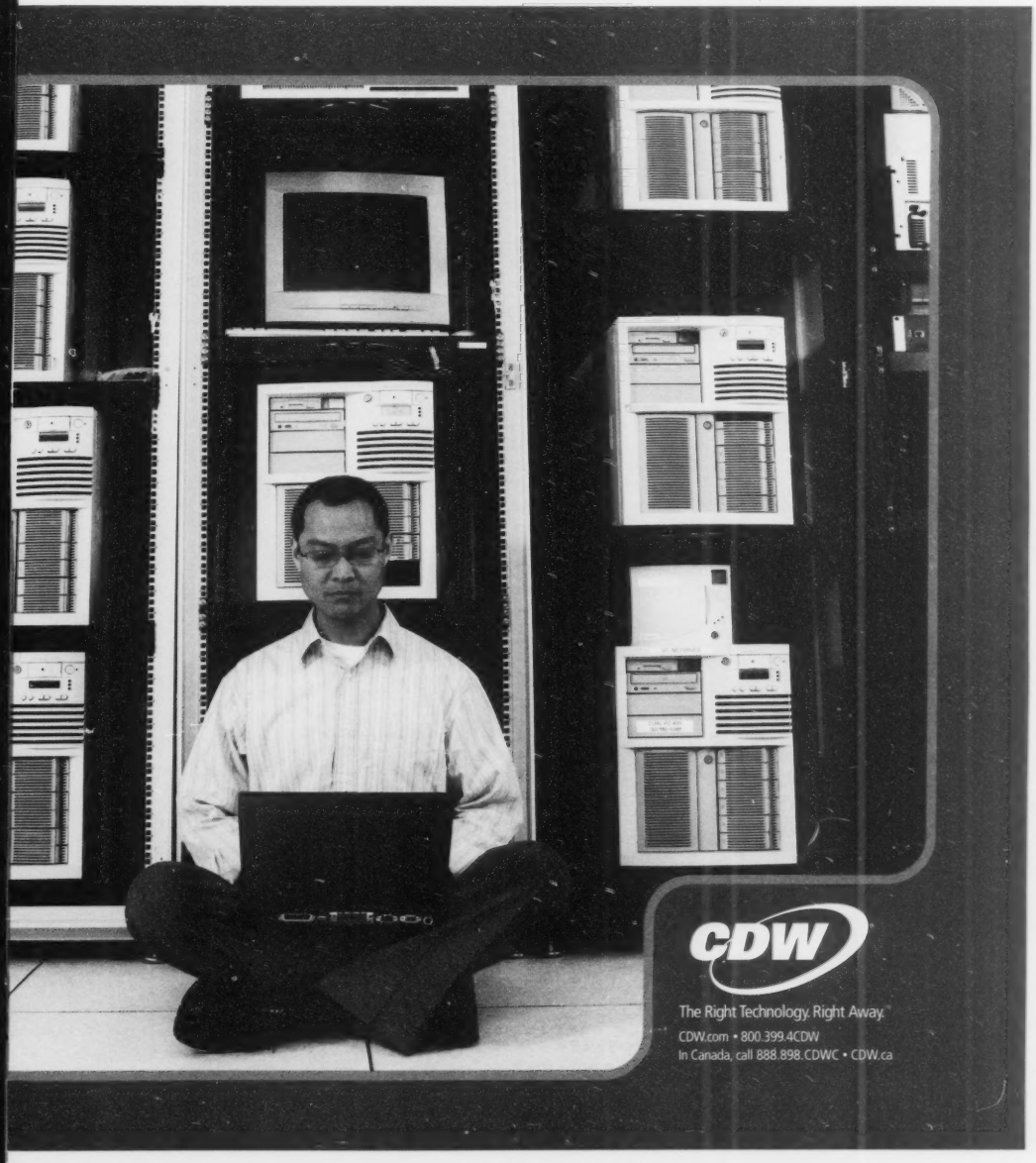
While the new applications must still exchange data in real time with a central Oracle 10g database that stores rate and availability data, the embedded ObjectStore technology works as a front-end cache that significantly boosts query performance.

Using only Oracle, "our throughput used to be hundreds of transactions per minute," Park said. "Now it's hundreds per second."

"Increasing data volumes are making certain enterprise applications perform more slowly and are forcing some enterprises to look at improved database technologies and faster hardware," wrote Noel Yuhanna, a Forrester Research Inc. analyst, in his forecast for 2006.

The increased performance offsets what Park called a loss of flexibility from using an embedded database. For example, tweaking ObjectStore or the data it holds could require that developers rewrite the application in which it's embedded.

Park said he chose ObjectStore over "purer" caching systems, such as Coherence from Tangosol Inc., Cloudscape from IBM, and GemFire from GemStore Systems. "With caching technologies, you have to pop things into memory and then take it back out," he said.



DON TENNANT

Mind Benders

CONTRARY to the perceptions held by some people employed by companies that provide you with IT products and services, I have nothing against IT vendors. Sure, I play devil's advocate sometimes, I poke fun at them sometimes, I play hardball with them sometimes. But I can assure you that I have no voodoo dolls that resemble Larry Ellison, Scott McNealy or anybody else.

DON TENNANT is editor in chief of *Computerworld*. Contact him at don_tennant@computerworld.com.

It's just that I have such a high regard for IT workers and what you do that I simply can't ignore the stark contrast I see between the IT vendor community and the IT user community. And since those communities not only overlap but are really constituencies of the same profession, the actions of IT vendors matter to me because they reflect on that profession.

The contrast has to do with the fact that whereas the user community tends to engage in practical pursuits that advance technology, the vendor community tends to get bogged down in nonsensical activities that bend the mind.

Take Oracle's recent decision to bow out of the vendor lobbying cabal known as the Information Technology Association of America. According to Robert Hoffman, Oracle's vice president of congressional and legislative affairs, one reason for the decision was that ITAA President Harris Miller was planning to run against incumbent George Allen for one of Virginia's U.S. Senate seats.

"It concerned many of us at Oracle that Harris would consider challenging Sen. Allen" in light of the latter's accomplishments on technology issues, Hoffman said. "We as an industry should support our friends and stand by them."

Now, wait a minute. Oracle is saying it left the ITAA partly because it didn't like Miller trying to unseat Allen. But if Oracle is unhappy with Miller, why leave the ITAA, the outfit that would no longer have Miller running it, in protest? How irrational is that?

Then there's the big news event that Oracle's Ellison and Sun's McNealy staged last week at Oracle's California headquarters. All the hoopla, if you can imagine, was over Oracle renewing its Java license and Sun bundling Oracle on some servers. McNealy even admitted at one point that "there's not a ton of news today."

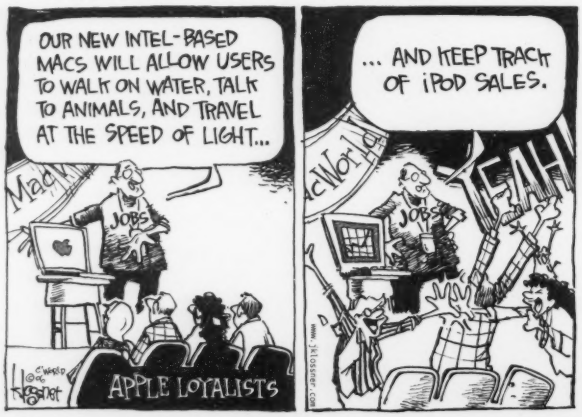
Why would you do that? Why bother staging a big news announcement unless you're going to announce something users care about? Or, better yet, something that they're clamoring for, like open-sourcing Java? It's like the kid back in grade school who would always bring in something really stupid for show and tell.

And remember Mercury Interactive, the company that was delisted from Nasdaq because of accounting irregularities that led to the resignations of the CEO, CFO and general counsel? This one just kills me. Last week, Mercury apparently decided it didn't have enough of a financial headache to deal with, because it went out and bought Systinet, an SOA vendor, for $105 million. Wouldn't you think these guys would get their own house in order before buying somebody else's?

I can't help but contrast all of this nonsense with the user community news we covered in last week's issue. We had the District of Columbia using Web services to share emergency-response data with other jurisdictions, General Motors working with its dealers on integrating their business systems, and CNL Financial Group taking aggressive action on revamping its disaster recovery plans. You just don't see these users engaging in the inexplicable goofiness that IT vendors all too often engage in.

It's time the vendors showed us some mental mercy. A mind is a terrible thing to bend.

Don Tennant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THORNTON A. MAY

The Time for Leading Is Upon Us

AS A FUTURIST, I love mid-January. While December may be the season to be jolly, January is most definitely a month for decisions. From Olympian heights, we survey the year past and assemble the information and resources necessary to craft plans for the year to be. What exactly are we going to do this year? 2006 is going to be all about leadership — creating environments, cultures and behaviors conducive to growth, innovation and meaning-making. As 2006 gets started, we truly do stand on the cusp of something new.

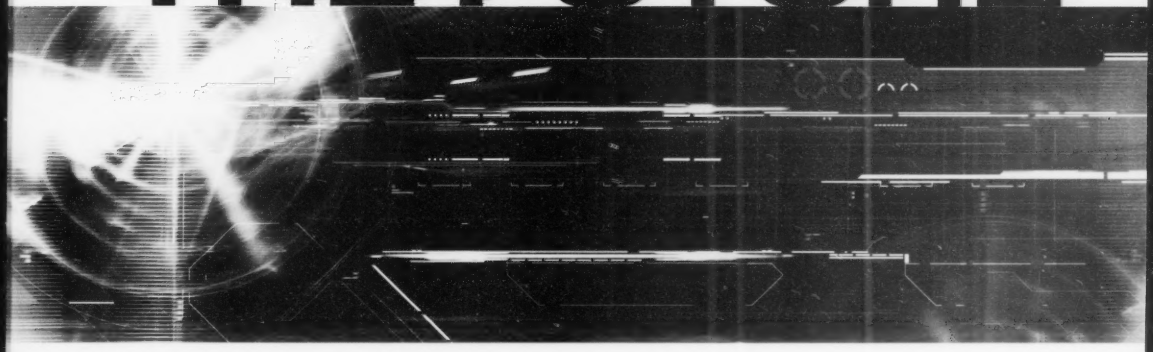
THORNTON A. MAY is a longtime industry observer, management consultant and commentator. Contact him at thorntonamay@aol.com.

To deal with all this newness, to get a handle on all the possible paths and alternatives that lie before us, IT leaders would be foolish not to take advantage of the full bounty of predictions that are but a search engine keystroke away.

On Google, a search for "future predictions" generates some 25 million hits in 0.18 seconds. On MSN, a similar search produces 425,728 hits in 0.13 seconds. You are not alone in trying to figure out what comes next and what we should do next. The scope, scale and span of the questions raised by those who predict are mind-bogglingly large. A vast array of trend-watchers, influencers, style mavens, PR wonks, marketers, critics, think tanks and vendors stands ready to guide your path forward.

Every media outlet for the entire month of January can be expected to assemble competing gangs of symbolic analysts bloviating about the future. Your job is to make some sense of all this noise. Which of these prognosticators is to be believed? Which path should be followed?

OPERATIONAL BI: BUILDING THE FUTURE



WITH BUSINESS NEED DRIVING INFORMATION ANALYSIS DEEPER INTO THE CORPORATION, CIOs MUST MAKE OPERATIONAL BI A REALITY TO TRULY IMPACT OPERATIONAL EFFICIENCY.

SYBASE

intel hp invent

POWERING DATA ANALYTICS

AS BUSINESSES INCREASINGLY stake their survival on the ability to manipulate and analyze data, the importance of operational business intelligence has skyrocketed. Operational BI, which embeds analytical processes within the operational business structure to trigger real-time decision making and collaboration, is fundamentally changing how data is used, where it exists and how it is accessed.

This change is rapidly exposing the limitations of traditional analytical tools. Most traditional databases and data warehouses don't take into consideration the increasing use of unstructured data stored outside these systems. Moreover, data used for operational analysis is frequently accessed before coming to the data warehouse, such as RFID data coming from a store or warehouse being used at a number of points before being sent to a data warehouse. That trend will continue with the soaring growth of self-service technologies, a trend that demands split-second return times on queries that are increasingly integrated into the business process.

As operational BI spreads, CIOs and IT managers face a dilemma: They must enable new strategies for how their companies use information, or risk a significant competitive disadvantage. But how do you ensure success as you move from operational BI theory to reality? The following tactics are key to the successful implementation of this promising new technology.

Choose service-oriented tools and products. Operational BI depends on a company's ability to collect and analyze information midstream—such as a point-of-sale cashier accessing a

customer profile to offer tailored promotions—before sending it to core systems, regardless of who owns the master data store. "The ability to get a glimpse of the entire pipeline in and outside of the company is very valuable to the agility of a corporation," says Chris Thomas of Intel Corporation. A new generation of service-oriented BI tools that can collect feeds mid-tier and then send the results of this analysis along to core systems helps companies respond quickly and effectively to changing market conditions. Products such as Sybase IQ and Avaki, for example, are built to respond to operational BI requirements.

Build a foundation of service-oriented architecture. Service-oriented architecture that lets users access real-time knowledge with a set of service feeds can maximize business agility while reducing complexity. For example, SOA flexibly and cost-effectively supports the midstream, on-the-fly data collection and analysis necessary for operational BI. Service orientation also supports operational BI throughout the business by pushing BI data out to the mobile workforce and enabling workers across the enterprise to incorporate this vital data into their workflow. The hardware foundation for SOA should include robust, open standards-based 64-bit platforms such as HP servers powered by the Intel® Itanium® 2 processor.

Consider Enterprise Information Integration. EII, as evidenced in solutions such as Avaki, federates data sources to provide a single view for end users and is a good choice for customers with information coming from dozens of sources and users who need to make decisions on the fly. For example, the new straight-through processing requirements in the financial services industry will drive institutions to perform immediate risk analysis and increase the need for operational BI.

VALUE ACROSS THE ENTERPRISE

Operational BI proves a smart investment from both the business and technology perspectives. By taking the guesswork out of operational decision making, companies can tie decisions directly to pertinent business information and make decisions on the fly throughout the enterprise. Imagine sales reps sending and receiving real-time order and refill data via mobile devices, and warehouse workers using that data to reroute deliveries en route. Or consider the value to financial workers using real-time data to do immediate risk analysis. Those decisions can be based on information pulled from a wide variety of data, and that data will be available regardless of location, as mobile workers use operational BI information from a variety of devices. Operational BI solutions from Sybase running on HP servers with the Itanium 2 processor should scale to the ever-increasing user population that needs to access analytical data at the production level.

On the technology front, "CIOs should expect faster query speeds and faster data loading as their operational BI solutions take advantage of performance boosters such as a 64-bit architecture and analytics algorithms that have been optimized for the Itanium 2 processor," says Thomas. They should find infrastructure management easier and more cost-effective as a partitioned, virtualized environment allows for flexibility in meeting peak demands, along with better management of hardware and server growth. With a solution based on Sybase IQ, HP servers and the Itanium 2 processor, storage and hardware investments should lessen long term—Sybase IQ requires less storage and hardware than traditional database environments, and powerful Intel Itanium 2-based servers from HP can support rising workloads and offer capabilities to support virtualization and enhance manageability.

In the final analysis, taking the time to understand the opportunities and challenges from both business and technology perspectives should pay big dividends in business value down the road. "Define pain points in business value terms," says Joseph Shaffner at Sybase. "By applying analytic solutions at the operational point of pain itself, companies can derive immediate business advantages. This is the promise of operational business intelligence."

FOR MORE ON operational BI and the data explosion, go to: www.computerworld.com/dataexplosionzone.

ACTION ITEMS

Tactical Tips

IT directors will be charged with the tactical elements of operational BI implementation once the decision has been made to move forward. Among the important task points:

- Transitioning to a service-oriented architecture. Although this can and should be done on an application-by-application basis, IT directors need to create the components that will service the operational BI application and implement the interfaces that allow applications to communicate.
- Implementation checkpoints. Throughout the BI project implementation, IT directors must ensure that key operational BI requirements are being met. Have the business processes that will be affected been analyzed for data sources? Have the disparate data streams been directed to a middleware layer? Have service feeds for user access been specified and built? Has the infrastructure been tuned to perform to operational BI specifications (for example, large numbers of read-only queries)?
- Building a middleware layer for operational BI. IT directors will need to spec and implement a middleware layer such as Enterprise Information Integration, which federates disparate sources of data in one place to provide a single view for users.
- Planning for mobile information access and cross-enterprise collaboration so people can get the data they need when and where they can use it to impact the business. This includes the ability to mobilize enterprise information such as that often found in analytic engines and databases. For example, RFID data can be used at several mobile points of contact along the supply chain, from the point of sales to the distribution warehouse.

MICHAEL H. HUGOS

Looking for The Next Great Thing

PART OF every job is to have that job disappear. It happens for all sorts of reasons, some under our control, some not. We use words like *fired, resigned, laid off, outsourced* and *downsized.* While those words may describe what happened, they miss a key point: Whatever happened, losing or leaving a job is always the start of an experience we call "in transition."

I'm in transition myself at the moment.

Like it or not, this experience is integral to our career development, especially in times of rapid economic change, like now. It is driven by a few simple imperatives, such as the need to find another way to pay the rent and the need to figure out what to do with the rest of your life (or at least the next few years). These imperatives have a way of inducing a process of change and growth that any sane person would otherwise try to avoid.

MICHAEL H. HUGOS is an IT executive currently in transition. He is the author of *Essentials of Supply Chain Management* and *Building the Real-Time Enterprise: An Executive Briefing* (both published by John Wiley & Sons). He can be reached at **mhugos@yahoo.com.**

As I work through this process, I like to think out loud. I figure things out as I hear myself talk and listen to what others say in return. This method works well for me, but I know it can be a burden on others. They have to hear me processing the same stuff over and over again.

One test of any relationship is how well your spouse or partner can handle this noise and know when to respond and when to remain silent. My wife has been mostly silent. She has plenty of issues of her own to think about, but she has shared a few choice bits of advice with me. In a nutshell, she said, "Reinvent yourself and be agile."

I was stunned to hear this. The implications of it are twofold. The first is that she actually listened to me over the years as I rambled on about how business needs to reinvent itself and be more agile. For that I love her all the more. The second implication is that I'll have to take my own advice. I'm not sure I'm thrilled about that.

The practice of the IT profession has changed in a big way. It's no longer about the technology; it's about what we do with the technology. Companies can acquire just about anything they want, and the price of stuff keeps dropping, so there's not much advantage in merely having stuff. Opportunities come from bold and imaginative use of information — not from increasingly commoditized technology. Now I get to apply this insight to myself. Oh, great — it's a good thing I have the rent imperative to push me.

In the spirit of thinking out loud, here are a couple of things I've figured out so far. First, since most business activities are completely intertwined with and utterly dependent on technology, there's no meaningful distinction left between technology and business operations. Second, a place where experienced IT folks can create enormous value is in business operations that make intensive use of IT. We've seen business people put in charge of IT; what about IT people in charge of operations? Who better to imagine what could be done and how to do it?

OK, if that's true, then it leads me to the next question: Does this mean that we need to reinvent ourselves as new hybrid IT/business operations people whose mission is to deliver agility and competitive advantage?

1. The future will be a linear extrapolation of the past, unless you intervene. High-performing executives have a formalized process for collecting lessons learned from the previous year — those wondrous chunks of "vu jà dé" (things we experienced that we never want to experience again). Policies, procedures and monitoring systems are put in place to make sure that mistakes of the past aren't repeated in the future.

2. It will be a bad year if you don't have a job because you didn't delight customers. Ask your internal customers (one of whom is your boss) and external customers their thoughts about the year to come. Where do they want to go? What do they want to have happen?

3. You are not the only smart person in the arena. Lyndon Johnson used to tell the story of what House Speaker Sam Rayburn had to say to Harry Truman on the day that Truman became president: "Now, Harry, a lot of people are going to tell you you are the smartest man in the country, but Harry, you and I know you ain't." Benefit from the smartness of those around you.

4. Cause conversations about the future to happen. Host a futures party. Invite the smart people in your supply chain, in your chain of command, in your industry and in the economy, and host a daylong seminar on "What comes next, and what should we be doing about it?"

One of my jobs as an überfuturist is to collect all the year-end predictions of the ünterfuturists. Don't try this at home. Your head will explode.

WANT OUR OPINION?

More columnists and links to archives of previous columns are on our Web site: **www.computerworld.com/columns**

READERS' LETTERS

H-1B Visas Lead to Indentured Servitude

THE REAL problem with H-1B visas is that they are tied to the employer ["A High-Tech Worker's Guide to Globalization's Myths," *Computerworld.com*, Nov. 14], which results in virtually indentured servitude for the workers and holds down their salaries.

If H-1B instead carried a kind of provisional permanent resident status, tied to employment but not to an employer, then talented foreign workers would be able to demand the salaries they deserve and they would no longer be "yes persons" but employees fully participating in the intellectual life of their companies, secure in the knowledge that they can vote with their feet.

What are reasonable restrictions then? Only graduates in the top percentile of really great schools should be eligible. Visa holders should be required to have a clean criminal record and a minimum income per year. If they become unemployed for more than a quarter or are convicted of a felony, home they go. Once a worker's provisional period was complete, he would be a full permanent resident with all the privileges that implies.

Geoffrey Feldman
Software architect, Lowell, Mass.

Personal E-mail Use Is No Big Deal

ANOTHER STUDY stating the obvious ["Study: One Quarter of Corporate E-mail Is Personal," *Computerworld.com*, Nov. 22].

All employees, including managers, will always spend idle cycles doing something. Before the Internet, it was drinking coffee and reading the paper, hanging around the water cooler, wasting trips to the mail room, making copies for personal use, etc. Now this time is simply spent using more contemporary outlets, including the Internet. What did people expect was happening? What's more, people today are spending more time at the office, and with more couples working, there's less time to communicate with friends and family or to shop.

The first company to react to this news with anything other than a yawn should be knocked upside its collective management head.

Thomas Gagné
CTO, HCS Payment Services Inc., Huntington Woods, Mich.

Users Responsible For Project Success

REGARDING DON Tennant's Dec. 19 editorial, "Skin in the Game": Sure, companies pay a lot of money for IT products and to have them customized, but to expect the vendor and/or implementer to put their money in the game ignores the simple fact about IT projects – their success has hardly anything to do with the software, hardware or network and almost everything to do with the people involved on the customer's side.

If the customer puts on a project people who have hidden agendas or are resistant to change or are just plain stupid, the project will probably fail or run hugely over budget. Anyone involved in implementations has seen this more than once. So don't put too much blame on the vendors and implementers without encouraging the customer to put the right "skin in the game."

Simon Griffiths
Johannesburg, South Africa

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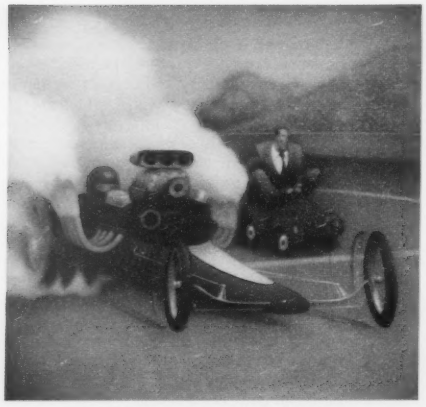
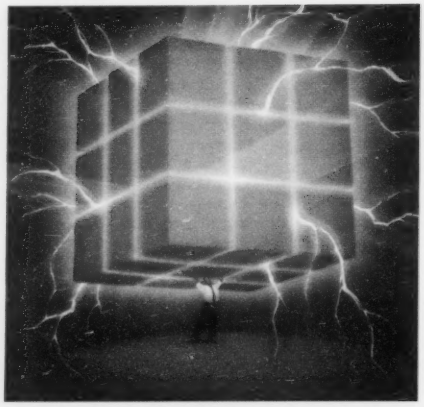
Innovations by InterSystems



Rapid development with robust objects



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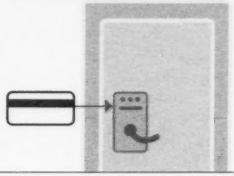
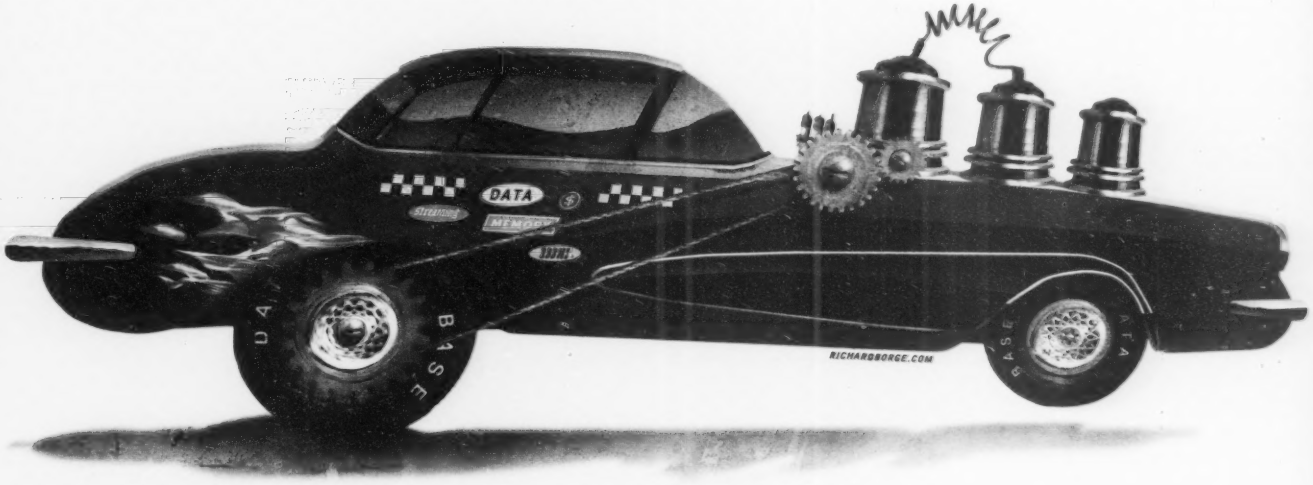


It's Just the Key To Your Room
A *Computerworld* investigation should set the road warrior's mind at ease about the possibility of personal data being placed on hotel card keys. **PAGE 28**

SECURITY MANAGER'S JOURNAL
No Rest for Weary Security Manager
During her vacation, C.J. Kelly has to deal with a spoofed personal e-mail address and a load of spam. **PAGE 30**

QUICKSTUDY
Flash
The popular multimedia Web authoring program uses vector and raster graphics, a scripting language and bidirectional streaming of video and audio to create animated presentations, also called Flash movies. **PAGE 32**



High-Speed Databases

REV CORPORATE APPS

New technologies for hyperperformance are speeding transaction processing and analytics. **BY GARY H. ANTHES**

RELATIONAL DATABASE management systems have become all but ubiquitous in enterprise computing since 1970, when they were first devised by E.F. Codd. But as powerful and flexible as those databases are, they've proved inadequate for a handful of ultrademanding applications that have to process hundreds or thousands of transactions per second and never go down. Now, the very-high-performance database technologies that sprang up to serve these niche markets, such as options trading and telephone call processing, are poised to move into mainstream computing.

Some of the new products simply move the action from disk to memory, where access is a million times faster. Others are more radical departures from tradition, such as "streaming" technologies that store queries and pass data through them rather than run queries against stored data. Still others have found clever ways to sidestep much of the overhead — such as table locking — associated with the traditional RDBMS.

While some of these products do "store" data in memory-resident databases — either relational or object-oriented — the tools are primarily designed to speed transaction processing and analytics, not to act as data repositories.

Thanks for the Memory

Interact Inc., a Lincoln, Neb.-based communications service provider, has for more than 10 years used the in-memory database capabilities of Hewlett-Packard Co.'s NonStop servers to do real-time pricing of incoming telephone calls. But the big, expensive computers were overkill for some Interact customers, such as small mobile telephony resellers, says Tom Massey, director of business development.

So 18 months ago, Interact began to offer a call-pricing service that runs on Linux and Unix servers and uses

Oracle Corp.'s TimesTen In-Memory database. "NonStop is big iron and more geared to larger operators," Massey says. "Linux and Unix platforms scale down much better, and operators often prefer them because they are not knowledgeable about NonStop."

Oracle acquired the TimesTen technology last June. Oracle saw the in-memory database as a way to extend its enterprise back-end data storage capabilities to high-performance real-time applications such as Interact's. Interact uses Oracle for back-end data storage as well and does not yet interface those databases with TimesTen, but Massey says he plans to do so.

"We need sub-10-millisecond response time, and you can't get that performance out of an Oracle relational database," says Ed McKee, director of applications at Interact. "To get that kind of performance, the amount of iron you'd have to have would be very significant."

On the other hand, he notes, the in-memory TimesTen product isn't suitable for large-scale data archiving. Interact can serve 1 million telephone subscribers with just 2GB of data in memory because only customer balance information is needed online.

Aspect Software Inc. in Westford, Mass., uses TimesTen for call center services. Traditional databases don't have the sub-500-millisecond call-routing capability it requires, says Chief Technology Officer Gary Barnett. Aspect's customers call centers typically have big databases of customer history behind them but cache key information upfront, in memory, for near-instantaneous response to customer requests, he says. But deciding what data to replicate forward, and how often, can be tricky, Barnett warns. "There's a trade-off. The more data you have [in memory], the more intelligent we can be in routing calls. But the more data in real time, the more expensive it is."

Some users choose a memory-resident product for its features and then gain high performance as a by-product. For example, Interstate Hotels & Resorts Inc. chose the TM1 financial analysis tool from Applix Inc. in Westboro, Mass., because it was easy to use. "We wanted to consolidate all the hotels to close the books each month," says Paul Bushman, senior vice president for IT at the Arlington, Va.-based manager of more than 300 hotels. "But now we use it on a daily basis."

TM1, which Applix calls "the world's fastest business intelligence analytical engine," moves disk-resident data from Oracle databases in Interstate's accounting system into memory in an Excel spreadsheet format. From there, users without technical expertise can run what-if financial models as well as do financial rollups by a variety of user-specified criteria. They can also perform online consolidations of the type more typically performed in month-end batch processes, Bushman says. "In the accounting system, to produce one financial statement for one hotel for one month could take 30 minutes in a relational database," he says. "But here we can do a consolidation of all 300 hotels in a couple of seconds."

Fly-by Analysis

While most of these "real time" products achieve their scorching performance by moving data into memory, one high-performance product — the StreamBase "stream-processing engine" from StreamBase Systems Inc. in Lexington, Mass. — just grabs incoming data and analyzes it as it flies by.

StreamBase applications use an "inbound" query-processing model, in which records are processed before they're indexed and stored. The records flow through the query, which can also transform the data while it's moving.

Vision Systems & Technology Inc. (VSTI) in Ellicott City, Md., is helping several defense and intelligence agencies evaluate StreamBase prototypes. StreamBase can filter torrents of incoming data — structured or unstructured — and decide on the fly which should be presented to an analyst at once, which can be stored for later queries and which can be discarded, says Carol Lundquist, an IT consultant at VSTI.

The technology can generate alerts when a passing record contains, for example, a certain name or phone number. "You can put keywords in an Oracle table, and anytime a keyword is added, it gets dumped down to StreamBase immediately," Lundquist says.

"Some government systems are being flooded with data," she explains. "The Oracle systems are having trouble keeping up, and you get data falling on the floor." One government system Lundquist worked on loaded 1 billion records in a day, she says.

Filtering can be the salvation for some of those systems, says Bryan Harris, CTO of VSTI. "The idea is to load the needles, not the haystack," he says.

Harris says streaming technologies may complement rather than compete with traditional back-end RDBMSs. And they are not necessarily an alternative to the in-memory products, either, he says. "If you are doing queries across many different IT systems, that introduces a lot of processing across the entire network," Harris says. "In-memory data caching, if done right, can greatly reduce the amount of system resources used in total. But it doesn't really address the streaming issue." Depending on its mix of applications, a company could benefit from a combination of back-end databases, in-memory databases and streaming technology, he says.

Another variation on the in-memory database theme comes from Ants Software Inc. in Burlingame, Calif. Because Ants Data Server is a SQL-compliant relational database, the company says, it is readily compatible with the major back-end databases, such as Microsoft Corp.'s SQL Server, IBM's DB2 and Informix, and products from Oracle, Sybase Inc. and MySQL AB. And because it can reside on disk, in memory or both, there's no need to build an interface between different front- and back-end databases. The combination of these characteristics makes Ants easily scalable, the company says.

But Ants' major claim to fame is that, although it uses relational technology, it avoids almost all of the table row locking that can slow a traditional RDBMS to a crawl under heavy loads. According to Ants CEO Boyd Pearce, the reason traditional RDBMSs fail under load is because they aren't very clever at detecting when a real conflict is occurring and a lock is needed. "There are very few cases where you really need locks," he says.

Bellevue, Wash.-based Wireless Services Corp., which provides hosted data services to wireless carriers, chose Ants primarily because it provides an easy upgrade path from SQL Server. Small customers may reside entirely on a single SQL server, says CTO Curt Miller. When that system grows, it migrates to two or more SQL

Continued on page 27

Driving Demand

JIM GROFF, a senior vice president at Oracle and the former CEO of TimesTen Inc., says two broad trends are driving the migration of in-memory databases from niche markets, such as securities trading, into more mainstream computing. The first, on the hardware side, is the rise of inexpensive 64-bit microprocessor architectures that lift the old limit of 2GB of physical memory available to Wintel applications.

The second, in software, is "the emergence of an intelligent middle tier of the enterprise architecture," Groff says. In the middle tier, "where application servers live, where middleware lives, where business activity monitoring and Web services live, that's where there's a tremendous amount of action in enterprise IT today."

And all that action entails a lot of data queries and exchanges among application servers, database servers and storage networks. "The scaling can't keep up; the back end can't keep up," Groff says. "So intelligently caching the right information in the middle tier is emerging as a key solution."

Cached information could include key customer data pulled forward into a customer call center at the beginning of a call so that common questions can be answered without delays, he explains.

Streaming technology will move into supply chain systems when radio-frequency identification tags go from the pallet level to the individual item level and a warehouse or store generates huge volumes of product-movement transactions, says Mike Stonebraker, founder and CTO of StreamBase Systems. "Long term, the huge market will be in the area of sensor networks. Everything on the planet of material significance may be tagged," he says.

"I definitely think these products deserve to be more in the mainstream," says Curt A. Monash, a *Computerworld* columnist and president of Monash Information Services, an IT consultancy in Acton, Mass. But, he adds, a lot depends on how vendors position them and how hard big vendors like Oracle push them.

Says Monash, "These are products you'd buy for a limited group of applications, and for those, they can be very valuable. But they are not general-purpose systems."

– GARY H. ANTHES

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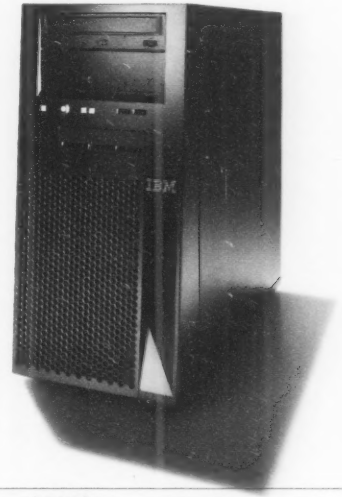

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Data Snafus Spur IT Action

THE Future of IT

Running IT Operations Like a Business Not So Easy, Execs Say

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Averaging over a dozen quotes a week from IT management - 21 in this recent issue

COMPUTERWORLD
The Voice of IT Management

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Server boxes. And when it reaches a certain point, Miller adds Ants servers for high-performance front-end message processing. Without Ants, the table-locking function at volumes much above 1,000 messages per minute "kills me," he says.

Because Ants supports the Open Database Connectivity standard, the migration is a snap. "Now if I want to use Ants, I just change the driver parameters to say, 'Talk to Ants,' " Miller says.

While the traditional back-end database will continue to be the choice of most users with big data repositories, the rise of multitier systems, as well as an increasing number of applications that process torrents of data, seem likely to pull these newer technologies into the mainstream.

HIDDEN HIGH PERFORMANCE

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The Players

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NAME: Ants Software Inc.
URL: www.ants.com
PRODUCT: Ants Data Server
CLAIM TO FAME: SQL-compliant RDBMS resides in memory or on disk, or it spans both. Avoids most table-locking.

NAME: Applix Inc.
URL: www.applix.com
PRODUCT: TM1
CLAIM TO FAME: Financial analysis/modeling in memory in Excel or Web client formats on data from back-end databases.

NAME: Db4objects Inc.
URL: www.db4o.com
PRODUCT: db4o
CLAIM TO FAME: Open-source object database for Java and .Net environments. No database administrator needed.

NAME: GemStone Systems Inc.
URL: www.gemstone.com
PRODUCT: GemFire Enterprise Data Fabric
CLAIM TO FAME: Data virtualization, distributed caching and complex event processing.

NAME: Kx Systems Inc.
URL: www.kx.com
PRODUCT: kdb+
CLAIM TO FAME: Integrated RDBMS spans memory and disk for real-time streaming and back-end storage.

NAME: Oracle Corp.
URL: www.oracle.com
PRODUCT: TimesTen In-Memory
CLAIM TO FAME: In-memory RDBMS for embedded applications or front-end data caching.

NAME: Progress Software Corp.
URL: www.progress.com
PRODUCT: ObjectStore ODBMS
CLAIM TO FAME: Real-time object database management and modeling for Java and C++ environments.

NAME: Skyler Technology Inc.
URL: www.skylertech.com
PRODUCT: Prime Processing
CLAIM TO FAME: Real-time data-processing engine uses prime number theory for in-memory analytics for financial services.

NAME: Solid Information Technology Corp.
URL: www.solidtech.com
PRODUCTS: EmbeddedEngine and BoostEngine
CLAIM TO FAME: Integrated in-memory and on-disk RDBMSs.

NAME: StreamBase Systems Inc.
URL: www.streambase.com
PRODUCT: StreamBase
CLAIM TO FAME: High-volume, real-time, memory-resident data-stream processing engine.

NAME: Vhayu Technologies
URL: www.vhayu.com
PRODUCT: Velocity
CLAIM TO FAME: Analysis of real-time streaming and historical securities market data.

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IT'S JUST THE KEY TO YOUR ROOM

Computerworld surveys 100 hotel card keys to explode an urban myth.

ROBERT L. MITCHELL

WARNING: Hotel card keys may contain personally identifiable data on the magnetic stripe. Is it fact — or fiction?

"It's an urban legend. It doesn't work," says Joe McInerney, president of the American Hotel and Lodging Association (AHLA). Nonetheless, unsubstantiated reports keep surfacing every six months or so, he acknowledges.

For example, last fall, an IT director at a travel club in Wyomissing, Pa., told *Computerworld* that he had found personal information on magnetic hotel key cards when visiting three major hotel chains. The IT professional said he read the cards using a commonly available ISO-standard swipe-card reader that plugs into any USB port. At one resort, he said, his card key contained credit card information, his address and his name. He said the hotel expressed surprise when he showed it the results. His comments, which appeared in a *Computerworld* blog in September [QuickLink a7730], created a furor. He subsequently declined to comment for this story.

As part of a *Computerworld* investigation into the allegations, reporters and other staff members who traveled last fall brought back 52 hotel card keys over a six-week period. The cards came from a wide range of hotels and resorts, from Motel 6 to Hyatt Regency and Disney World. We scanned them using an ISO-standard card reader from MagTek Inc. in Carson, Calif. — the type anyone could buy online.

We then sent the cards to Terry Benson, engineering group leader at MagTek, for a more in-depth examination using specialized equipment. MagTek also gathered cards from its own staff. In all, 100 cards were tested.

Most cards were completely unreadable with an off-the-shelf card reader. Neither Benson nor *Computerworld* found any personally identifiable information on them. Based on these results, we think it's unlikely that hotel guests in the U.S. will find any personal information on their hotel card keys. There is, however, some debate among industry experts over whether some older systems could have been configured to store personal information under specific scenarios.

To understand why personal information is unlikely to appear on hotel card keys, you must first understand how the technology works. Electronic locks that use magnetic cards were developed to address petty-theft problems associated with traditional keys. "Those problems have virtually gone away," says Brian Garavuso, CIO at Hilton Grand Vacations Co. in Orlando and chairman of the AHLA's technology committee. Most keys contain only a room number, a departure date and a "folio," or guest account code — although other data may be stored on them as well.

The door locks, which are standalone, battery-powered devices, each contain a sequence of lock codes. The sequence advances when an expired card is swiped or a new card inserted. The lock also logs when a guest, maid or other hotel employee has entered the room. Hotel door locks aren't wired back to the systems at the front desk. Therefore, if a card is lost and a new card is issued, the room remains unprotected until the new card is inserted into the lock and it resets. Hotels use card-key locks because they are relatively inexpensive, make rekeying easy, include a time limit and provide an audit trail of room access.

Most card keys aren't readable because electronic lock systems use proprietary encoders and readers. While ISO-standard cards store data on three tracks on the magnetic strip, hotel lock systems use a proprietary encoding pattern and encrypt room-key data on Track 3, says Mark Goldberg, executive vice president and chief operating officer at magnetic card maker Plasticard-Locktech International LLP in Asheville, N.C. PLI's name appeared on many of the card keys *Computerworld* tested.

Only 15% of the cards tested yielded any data using the USB card reader. The alphanumeric strings did not match any of the users' credit card numbers, nor was any intelligible text found. At MagTek, Benson was able to pull up strings of binary data from the cards but could not decode it. A specialized reader would be needed to decipher it, but "you

SPRAYING FOR DATA

WHEN TESTING card keys, electronic lock makers often use a product called Magview to visibly identify the encoding pattern or see an embedded bar-code pattern. The process is simple: You spray the card with a mist of suspended metal particles, which drop onto the magnetic surface. "The metal particles stand up on the encoding sequence. It will show you the encoding pattern and its positioning on the card," says Mark Goldberg, executive vice president and chief operating officer at card maker Plasticard-Locktech International.

Whereas the ability to see data patterns appear on a credit card would amount to little more than an amusing parlor trick for most *Computerworld* readers, it's all business for Goldberg. He uses Magview spray to calibrate electronic key-coding equipment with his cards. But you won't find Magview next to the Pledge at your local grocery store, and it's not cheap. It's available only from Geneva Group of Companies Inc. in Minneapolis. The product, which is also used to align the magnetic heads of other electronic devices, sells for $52.49 for a 2 oz. bottle.

– ROBERT L. MITCHELL

won't be able to grab one of those off eBay very easily," he says.

Even then, the data would be unreadable because it is encrypted, says Mike Scott, new products manager at Saflok, an electronic lock maker in Troy, Mich.

On the Right Track?

Most electronic lock systems include a card encoder, a user workstation and server software. That system interoperates with the property management system (PMS), the software that handles functions such as reservations, registration and guest billing. The PMS communicates with the electronic lock system to generate new card keys and sends billing data to the back-end systems.

A point-of-sale system may also tie back into the PMS to allow the guest account code on the card key to be used to add charges for meals or other items to the room bill. In this situation, the account code exists within Track 2 on the card. This can be linked to the back-end billing system, where the customer's name, address and credit card information reside, allowing the guest to charge meals or bar tabs to the card as though it were a credit card.

Resorts such as Universal Studios use Track 1 as an amusement park pass and Track 2 for other charges, according to Saflok. While neither track is encrypted, it typically includes only the folio code. On some cards, the guest name and folio code may also be printed on the front of the card itself.

Could credit card data be embedded directly onto the card? "Technically it's possible, but why would you? It's not needed," says Garavuso.

Individual hotel-chain properties are often franchised to other owners that may outsource management to a third party — and may use a variety of back-end systems. However, although the back-end systems may vary, all hotel chains require that franchisees use their property management systems, Garavuso says.

In some resorts or hotels, the systems used in the bar, restaurant or other concessions may not be tied back to the PMS that contains the customer billing data. In that scenario, the hotel could choose to encode credit card data directly onto the hotel key to allow credit charges to be made, rather than going to the trouble of modifying both systems. That type of arrangement could explain the experience the IT director reported to *Computerworld*.

But is it likely? "If it were an older system, it's possible," acknowledges Louise Casamento, director of marketing at PMS vendor Micros Systems Inc. in Columbia, Md. In the past, people weren't as conscious of security, and ISO card readers weren't readily available on the Web, she says.

But Saflok's Scott says it's not likely. "I've been doing this for 15 years, and I've never seen it," he says, adding that Saflok's system doesn't even have an option to allow the encoding of credit card data onto its key cards.

"I would have to say that it [would have to be] a very old system — and they are still out there — that may still allow this," says Jocelynn Lane, vice president at VingCard AS, a vendor of electronic lock systems based in Norway. But, she adds, "we've never seen them compromised." Certainly no system would do it today, she adds.

The only situation where Lane says travelers might find sensitive personal information on card keys is when they're abroad. "There are locking systems in Europe that, when you check in, let you enter a credit card, guest name, everything [on the card]. But never in the States," she says.

"There are probably 60,000 hotels in the U.S. right now. To say no one has done it would be presumptuous on my part," says PLI's Goldberg. But the chances of guests running across the problem, if it exists at all, are slim. "I would never check into a Holiday Inn and worry about it," Goldberg says.

TESTING THE CARD KEYS

COMPUTERWORLD and MagTek tested 100 card keys gathered in the fall from the hotel and resort operations listed here. Each card was scanned using a MagTek swipe-card reader that has a USB interface and complies with a standard set by the International Standards Organization and the American Bankers Association. Cards were also inspected using specialized equipment at MagTek to see if data embedded using nonstandard formatting techniques could be read.

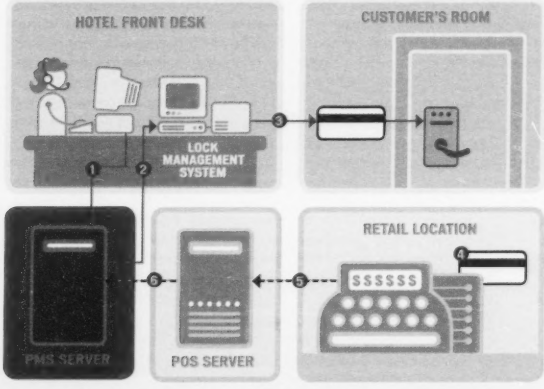
Because many properties are independently owned, we tested cards from properties in the same hotel chain in different locations.

Readable alphanumeric data was scanned from 15% of the cards using the ISO-standard reader. Most results were unintelligible strings of numeric or alphanumeric characters. In cases where numeric strings could possibly have contained credit card numbers, the data was returned to the owner of the card for inspection. One reporter found a match to the last four digits of the credit card used to pay for the room on the key card. No other meaningful data was found.

– ROBERT L. MITCHELL

- Bellagio
- Best Western
- Caesar's Palace
- Clarion Hotel
- Comfort Inn
- Coronado Springs Hotel (Disney)
- Courtyard Marriott
- Crowne Plaza
- DoubleTree
- Econo Lodge
- Embassy Suites
- Fairmont Hotel
- FourPoints (Sheraton)
- Gaylord Palms Resort and Convention Center
- Hilton
- Hilton Doubletree
- Hilton New York
- Hilton, La Fontana
- Holiday Inn
- Holiday Inn Crowne Plaza
- Holiday Inn on King
- Holiday Inn SunSpree Resorts
- Homewood Suites Hilton
- Hotel Omni
- Hyatt Regency
- Hyatt Regency Apa Aviana
- Hyatt Rosemont
- J.W. Marriott Grand Lakes Resort
- Kimpton (Hotel Monaco)
- La Quinta Inn Queens
- Mandalay Bay
- Marriott Hotels
- MGM Grand
- Mirage
- Monte Carlo Resort & Casino
- Motel 6
- OpryLand Hotel and Convention Center
- Park Lane Hotel
- Pilgrim Inn
- Red Roof Inn
- Residential Suites at Ritz-Carlton Towers
- Ritz-Carlton
- Royal Hawaiian
- Sheraton
- St. Regis
- The Inn at Penn (Hilton)
- The Latham Hotel
- The Venetian
- Travel Lodge
- Walt Disney World Port Orleans
- Westin
- Westin St. Francis
- Wyndham Hotel
- Xanterra Parks & Resorts

What's in the Cards?



When a guest checks into a hotel, the front desk checks in the guest (1) through the property management system, which holds reservation, guest registration and guest billing information. The PMS creates and relays a unique guest account number to the lock management system (2), which encodes it (3) on the guest's card key, along with the room number, a lock code to open the door and the start- and end-of-stay dates. Door lock data is typically encrypted and stored in a proprietary format.

When resorts allow guests to charge meals, gift store purchases or amusement park fees to the room by presenting their room cards (4), the account code and guest name are stored in unencrypted form. The data is scanned and passed to the POS system (5), which then relays the charge information, customer ID and, in some cases, the user's name back to the PMS for posting to the customer's bill (6). However, all personal information – including the guest's address and credit card number – remain in the PMS.

No Rest for Weary Security Manager

During a vacation, our manager has to deal with a spoofed personal e-mail address and a load of spam. By C.J. Kelly

SECURITY MANAGER'S JOURNAL

OVER THE holidays, our state agency was very quiet, and I took a vacation, hoping for rest and tranquility. But I found that I had my own security issues to deal with.

I was surprised to find that one of my personal e-mail accounts was accumulating over 600 bounced messages per day. This account has been associated with my consulting business for years. I was somewhat alarmed to find out that my domain was being used by a spammer and that my "catch-all" e-mail account was accumulating the bounced messages. (If I hadn't created a catch-all account, I would never have known this was occurring.)

I thought that perhaps my domain had been hijacked and was being used for malicious purposes. I quickly visited my personal Web site; everything looked fine.

I opened several of the bounced messages and inspected the headers. The spammer had used a fictitious e-mail address for my domain in the "Reply To" field (for example, horror@mydomain.com). Some messages had the original message intact, so I could tell that the spam was annoying but not pornographic or a phishing scam. I was grateful for that much. Most of the messages were of the "News Alert!" genre, with "advice" about purchasing a particular type of stock.

I wanted to better understand and resolve these issues:

- What is domain hijacking?
- How could my domain e-mail be used by spammers?
- How can I prevent this?
- Is my domain now blacklisted, and what can I do to "unlist" it?

Domain hijacking usually occurs when someone forgets to renew his domain registration, which then becomes available for purchase. Someone else buys it and begins to use it for a new Web site. Though this isn't illegal, imagine waking up one day to find that your Web site is no longer yours and is filled with undesirable content. Setting up automatic renewal with the registrant for your domain can prevent this from happening.

Domain theft is more serious and involves forging a domain registrant's credentials to make changes to the DNS settings, taking control of the domain.

In July 2005, the Internet Corporation for Assigned Names and Numbers issued a report titled "Domain Name Hijacking: Incidents, Threats, Risks, and Remedial Actions." It describes actual incidents and makes recommendations to prevent similar ones. Taking a cue from the report, I checked with my registrar and found that my personal information, such as my home address, was listed. I then changed my profile to make my personal information private. There's a small fee for this, but it's well worth it.

> The very idea that someone could use my domain to spam thousands of people horrified me.

Unwilling Accomplice

The next step was to find out how my domain e-mail could be used by disreputable spammers. What was actually happening was that my domain e-mail was being spoofed.

The CERT Coordination Center at Carnegie Mellon University has this to say about how this occurs: "E-mail spoofing may occur in different forms, but all have a similar result: A user receives e-mail that appears to have originated from one source when it actually was sent from another source. E-mail spoofing is often an attempt to trick the user into making a damaging statement or releasing sensitive information (such as passwords)."

We've all seen e-mails claiming that we must change our eBay or PayPal account information. Most people now know better than to supply any confidential information via e-mail, and most spam filters now plunk these messages into a bulk or spam folder.

Is there any way to prevent spammers from using my domain name in the "Reply To" field? No. Here's why. The Simple Mail Transfer Protocol doesn't require any authentication, nor does it validate e-mail addresses. It just sends and receives mail if the e-mail addresses are in the right format. There are many things that site administrators can do to protect their mail servers, and some of this information is available in the CERT document. However, in my situation, my domain hosting is outsourced to a company that hosts thousands of domains.

I learned from my ISP that associating my e-mail address with the catch-all account made my domain a likely target for spammers, so I changed the settings to bounce messages not addressed to valid domain accounts I owned. The bounces would inform the victims that it was not my domain that was spamming them.

The last question that I needed answered was whether my domain is now blacklisted because it's been used for spamming. I tried several Web sites to determine whether my domain had been blacklisted (I did a Google search on "domain blacklist"). All was well. Fortunately for people who have outsourced their domain and e-mail services, the hosting provider is generally diligent about making sure the IP address of the mail server isn't blacklisted, since that can have a negative effect on thousands of customers. The result of being blacklisted is that e-mail sent from your domain is tagged by e-mail servers or spam gateways as unwanted and generally gets dumped into the bit bucket instead of being delivered to your intended recipient. Basically, e-mail from your domain is blocked all over the Internet. This can be quite serious for a government entity or company.

Thankfully, the problem is solved. But the very idea that someone could use my domain to spam thousands of people horrified me. The entire incident reminded me to thank our e-mail administrators for their diligence in preventing agency personnel from being spammed to death. ▸

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "C.J. Kelly," whose name and employer have been disguised for obvious reasons. Contact her at mscjkelly@yahoo.com, or join the discussion in our forum: **computerworld.com/forums**

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/secjournal**

SECURITY LOG

IT Security Pros Gaining Influence

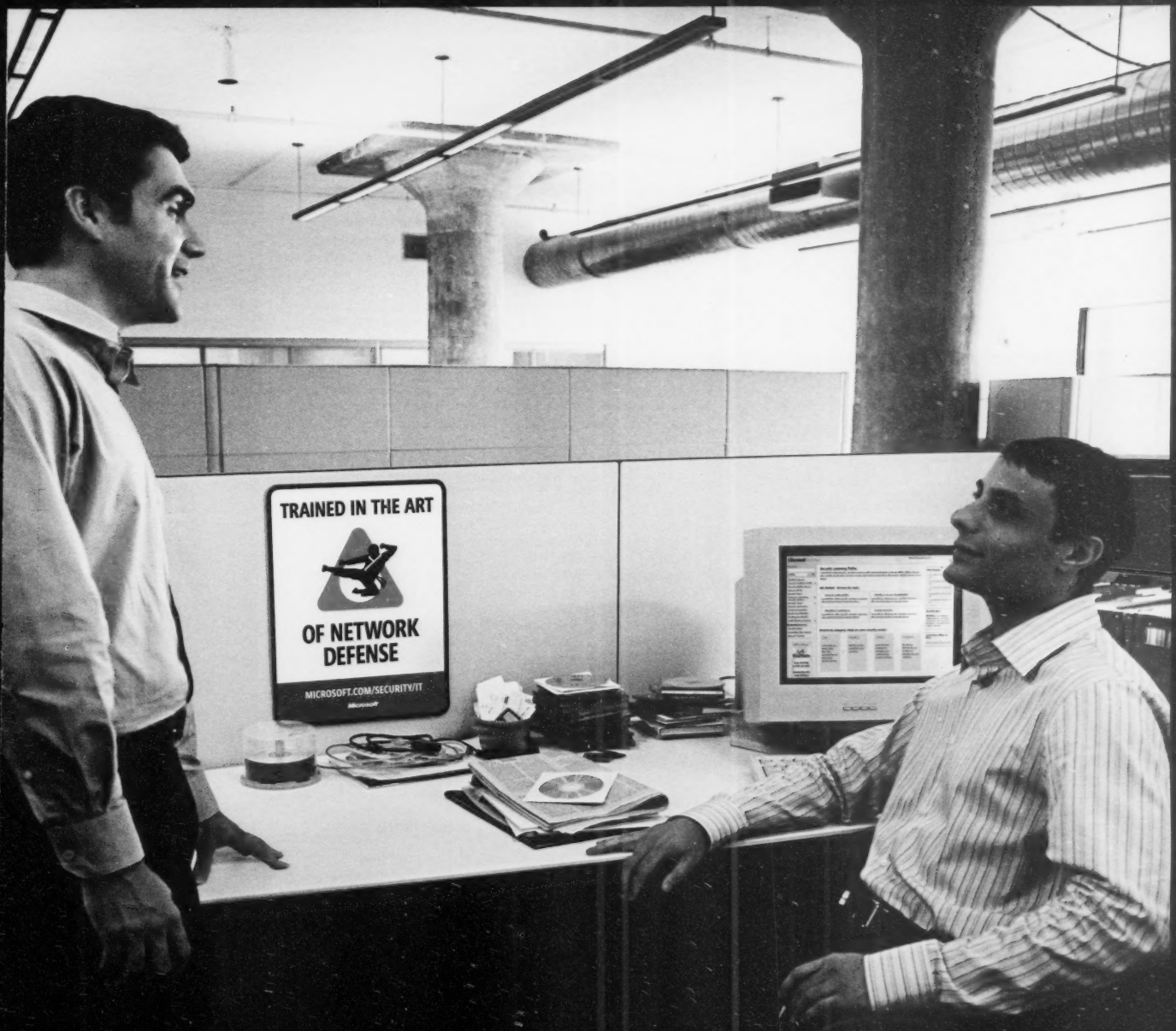
According to the 2005 Global Information Security Workforce Study, sponsored by the International Information Systems Security Certification Consortium, IT security professionals are gaining increased access to corporate boardrooms. More than 70% of those surveyed said they felt they had increased influence on executives in 2005, and even more expect that influence to keep growing.

U.K. DDoS Case Could See Appeal

The U.K.'s Crown Prosecution Service "is considering appealing a judge's decision" to dismiss a case brought against a teenager under the Computer Misuse Act (CMA). The teen allegedly launched a distributed denial-of-service attack in which he deluged his former employer with 5 million e-mail messages. The judge's ruling said the attack described in the case was not illegal under the CMA.

Iowan Pleads Guilty In Phishing Case

An Iowa man has pleaded guilty to charges stemming from a phishing scam. Jayson Harris conducted a scam between January 2003 and June 2004, targeting Microsoft's Corp.'s MSN customers and duping them into providing credit card numbers to supposedly keep their accounts active. Harris reportedly stole about $57,000 through the scam. The fraud charge against Harris could bring him a fine of up to $250,000 and 10 years in prison; he faces another maximum fine of $250,000 and up to 20 years in prison for wire fraud. If his crimes affected a financial institution, the penalties could be more stringent.



Find tools and guidance to defend your network at microsoft.com/security/IT

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- **Microsoft Security Assessment Tool:** Complete this free, online self-assessment to evaluate your organization's security practices and identify areas for improvement.
- **Antivirus for Exchange:** Download a free trial of Antigen for Exchange and arm your e-mail server with powerful multi-engine protection from viruses, worms, and inappropriate content.
- **Learning Paths for Security:** Take advantage of in-depth online training tools and security expert webcasts organized around your specific needs. Then test your security solutions in virtual labs, all available on TechNet.

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Microsoft

Flash

DEFINITION

Flash is a popular multimedia Web authoring program that uses vector and raster graphics, a scripting language and bidirectional streaming of video and audio to create animated presentations, also called Flash movies. In practice, the term *Flash* refers to the authoring program, the Flash Player virtual machine or browser plug-in, or the application files.

BY RUSSELL KAY

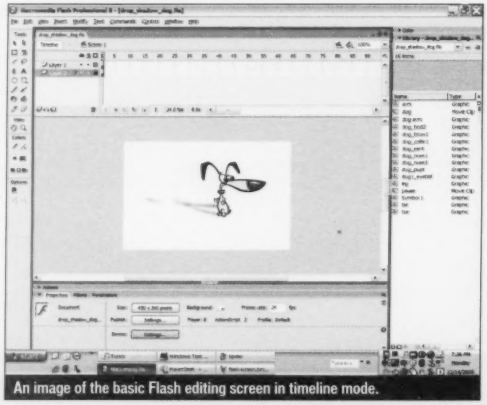
QUICK STUDY

When the World Wide Web became a mainstream communications medium, people quickly realized that visual appeal was important and, further, that animation attracted a lot more attention than static images. Advertisers especially wanted users to notice their banners and believed that animated graphics gave them an edge. But in the days before broadband access was widely available, animated graphics could mean very long download times.

One of the most significant developments in this area was the rapid proliferation of a graphics approach called Flash. A product of Macromedia Inc. (which Adobe Systems Inc. acquired last month), Flash enabled developers and artists to create sophisticated, frame-by-frame animation that included sound and could be streamed out to a browser. Such "movies" were relatively small and thus would download quickly.

Flash is built around vector graphics (such as PostScript, SVG and PDF files) that, when used with program code, are translated into small file sizes for Flash productions that require less transmission bandwidth than bitmaps or video clips. Besides the vector-rendering engine, the Flash Player includes the ActionScript Virtual Machine for scripting interactivity at runtime, support for video, MP3-based audio and bitmap graphics. The Flash format interleaves media and instructions so graphics start playing more quickly.

Flash players exist for a wide variety of systems and devices, so Flash movies will run consistently on Microsoft Windows, Mac OS 9/X, Linux, and Unix variants such as Solaris, HP-UX, Pocket PC, OS/2, Symbian, Palm OS, BeOS and Irix. An open-source Flash player has been ported to numerous operating systems, including Amiga. Flash Player 8 offers two video coder/decoders and runtime support for several other graphics formats, including JPEG, Progressive JPEG, PNG and GIF.



An image of the basic Flash editing screen in timeline mode.

Going Pro

With its recent 8.0 release, Flash has been split into two products, one of which is a professional edition aimed at developers doing graphics-intensive work.

From the beginning, Flash has used a timeline-based approach to defining what happens on-screen and when. Flash Pro 8 adds a forms-based method for creating Flash applications, through which developers can drag and drop items, as they can in many other integrated development environments, including Microsoft Visual Studio .Net and IBM's VisualAge family.

Flash includes server connectivity features that give it scriptable data binding for Simple Object Access Protocol Web services and XML, helping developers connect Flash applications to remote services.

Flash's video editing and encoding capabilities have been enhanced, and several plug-ins allow integration with popular third-party editing tools. The ActionScript language used with Flash is at Version 2.0, and the package now supports Cascading Style Sheets.

Having lots of animation can mean big files, which translates into longer download and start times. Flash's popularity has been driven in large part by the small size of Flash files and the relative ease of development. One way that Flash accomplishes this is with "tweened" animation, where the artist specifies key frames as completely as needed and then lets the software automatically generate the frames in between. The result is that, compared with many other plug-ins (including Java, Acrobat Reader, QuickTime or Windows Media), the Flash Player is quite small and initializes very quickly.

Another reason for Flash's wide use is the fact that it's a relatively open and stable format. Macromedia has released the specifications of the basic Flash file format, and thus a number of third-party tools have been created to work with and create Flash movies.

Flash's vector-based graphics are drawn with mathematical formulas; when you resize a vector-based image, its formula is recalculated to produce a scaled version of the image without distortion, which can be introduced when scaling bitmapped images.

History of Flash

In 1995, a small software startup, FutureWave Software Inc., decided to add animation capabilities to its pen-based computing graphics package. The advent of the plug-in application programming interface for Netscape Communications Corp.'s browser enabled it to achieve decent performance, and FutureSplash Animator was brought onto the market in 1996. Its timing was good, and two important and developing Web sites adopted the new animation technology — Microsoft Corp.'s MSN and Disney Online.

The Walt Disney Co. was also working with Macromedia's Shockwave package, and it was through Disney that Macromedia learned enough about the compact animation tool to want it for itself. In December 1996, FutureWave Software was sold to Macromedia, and FutureSplash Animator became Macromedia Flash 1.0.

Flash has since become synonymous with Internet animation, and its creator, Jonathan Gay, opines that Flash Player may now be the Internet's most widely distributed piece of software, with more users than Microsoft Internet Explorer, Netscape Navigator and Real Player.

Third-Party Tools

Besides the Macromedia products, numerous other graphics packages use the Flash format and can create Flash movies.

FlashCooker is a free Flash creation tool, available at *http://flashcooker.com/*.

AnFX offers Flash interactive intros, menus and text effects without the need to learn scripting; visit *www.stepaheadsoftware.com/*.

On2 Flix is a set of video encoding tools available at *www.on2.com/*.

SwishMax is a cheaper alternative for achieving Flash effects, available from *www.swishzone.com/*.

KineticFusion, at *www.kinesissoftware.com*, represents Flash as XML.

OpenLaszlo, at *www.openlaszlo.org*, is an open-source tool that compiles XML plus JavaScript to Flash.

GPLFlash is another open-source Flash decoder and plug-in, available at *http://gplflash.sourceforge.net/*.

MTASC is an open-source ActionScript compiler; you can download it at *http://mtasc.org/*.

Kay is a Computerworld *contributing writer in Worcester, Mass. You can contact him at russkay@charter.net.*

ONLINE RESOURCES

For a list of Web sites with information on Flash, see **www.computerworld.com/thisweek**.

Are there technologies or issues you'd like to learn about in QuickStudy? Send your ideas to quickstudy@computerworld.com.

To find a complete archive of our QuickStudies, go online to **computerworld.com/quickstudies**

SOONER OR LATER,
SOMEBODY,
(PERHAPS YOU OR YOUR BOARD OF DIRECTORS)
WILL MAKE IT
ABUNDANTLY CLEAR THAT
THE I.T. DEPARTMENT'S
NUMBER ONE PRIORITY IS
NOT YOUR TECHNOLOGY.

IT'S YOUR BUSINESS.

BRIEFS

Progress Upgrades ObjectStore 6.3

■ Progress Software Corp. released Progress ObjectStore Enterprise 6.3, the latest version of its object-oriented, real-time database, on Jan. 9. Bedford, Mass.-based Progress said Version 6.3 features significant improvements in performance and new support for 64-bit Linux. It can be embedded into both C++ and Java applications and provides much faster real-time transaction processing than non-embedded relational databases. Pricing starts at $4,000 for one developer and $1,000 for each additional license. Server pricing starts at $47,000 per CPU.

Teranode Updates Life Sciences App

■ New usability enhancements, including table data entry, number formatting, query building and autoscrolling, are among the added features in Version 2.8 of Teranode Corp.'s XDA informatics software, which is available now. Teranode XDA 2.8 enables machines' utilization and process throughput to be optimized by dynamically processing samples and compounds from multiple projects as one batch, the Seattle-based vendor said. Priced beginning at $1,000 per user and $25,000 per server, the software also provides shortcuts that let users bookmark and access experiments stored in a Teranode Model Server.

DataVelocity Adds to Risk Reduction Suite

■ DataVelocity in West Patterson, N.J., has added an IT portfolio management module to its flagship Erudition risk-reduction software suite. The module, called IT Portfolio, is designed to correlate and rank potential IT projects to an organization's business goals while improving project execution and planning through a variety of staff allocation tools. The software is priced starting at $50 per month under a managed service provider model.

CURT A. MONASH

XML Storage: Oracle Should be Hearing Footsteps

TWENTY-FOUR years ago, I raised a furor in the database management systems industry. As a rookie analyst — a stock analyst, no less — I argued that the then-dominant hierarchical/network data architectures should and would be replaced by "index-based" systems. Over the next few years, I was proved right, as inverted-list and relational products took over the DBMS market.

CURT A. MONASH is a consultant in Acton, Mass. You can reach him at **curtmonash@monash.com**.

Recently, I've argued a contrasting position: XML-based data architectures should and will get an important IT role in applications where tabular databases don't do a great job. Thus, I think that IBM's and Microsoft's more-or-less native XML storage systems will be more than niche curiosities, and Oracle will soon have to offer a worthy competitor.

There are three basic parts to the argument:

1. There are applications for which XML offers a superior logical architecture to SQL. These fall into two groups. First, there are apps in traditional categories — CRM, SCM and so on — that don't have naturally concise relational schemas. We can say that the natural schema is highly variable, or we can say that the overarching schema that takes this variability into account is horrifically complex. Either way, stuffing these apps into a relational straitjacket causes a lot of unnecessary grief.

Second, there are apps that deal with new kinds of complex, dynamic documents. Before XML, either these documents didn't exist at all or their processing couldn't be fully automated.

2. For many of these applications, native XML storage is more efficient than traditional relational storage. Before Microsoft's and IBM's recent announcements, there were two ways to store XML in a relational database. First, since an XML document is a string of characters, you could stick it in a Clob, or Character Large Object. But updating or retrieving specific data values inside the Clob is very inefficient; you basically have to process the whole document.

Alternatively, the XML can be "shredded" into a series of relational tables. But that can make for some very complex updates and joins. So for documents that have complex structures, neither approach is appealing. Native storage is a superior alternative.

3. XML storage won't have the same drawbacks that hierarchical/network products did. Hierarchical systems failed because reusing data in multiple apps was too difficult. Today, however, RDBMS vendors integrate XML and relational storage. You can access XML documents through SQL and your tables through XQuery. "Native" storage really is just a performance issue.

Admittedly, some technical problems are still unresolved. The industry hasn't even agreed upon, let alone implemented, a reasonably complete XQuery standard. Application development tools aren't nearly as mature as they are for row-and-column data models. But all this will get fixed over the next few years. And for some applications, the programmability advantages of XML are already compelling.

Here are some application scenarios in which XML storage seems to be the best choice:

■ **Complex industry data-interchange schemas.** Intercompany XML interchange happens, and when it does, it often conforms to complex industry-specific schema standards. Storing these relationally can be a major processing burden, and some Microsoft customers are using its native XML storage instead.

■ **Inventories of disparate product types.** Microsoft also cites success with customers who want to, for example, query across a database of books and DVDs and games and other kinds of media products. Yes, in principle, such an application can be handled relationally, especially in impure real-world relational systems that allow the use of NULLs. But it's not a great fit to the relational model (pure or otherwise), and UNION is few people's favorite relational operator.

■ **New kinds of dynamic documents.** Microsoft envisions a glorious future in which Office documents include XML references to refreshable data. A top investment bank is using IBM's Viper to transactionally manage derivatives contracts. IBM also cites the example of direct storage of complex forms. XML specialist Mark Logic Corp. has some traction in custom publishing. And all of these applications would or do benefit from native XML storage.

Bottom line: There are whole classes of applications that are very difficult to build using current technologies but will be much easier once XQuery becomes more usable. Some of the apps will be competitive-difference-makers. Larger enterprises should start looking into XML data storage now, and smaller ones may need to follow suit soon.

For more detail on this subject, please see *www.dbms2.com/category/object-oriented-and-xml-technology.*

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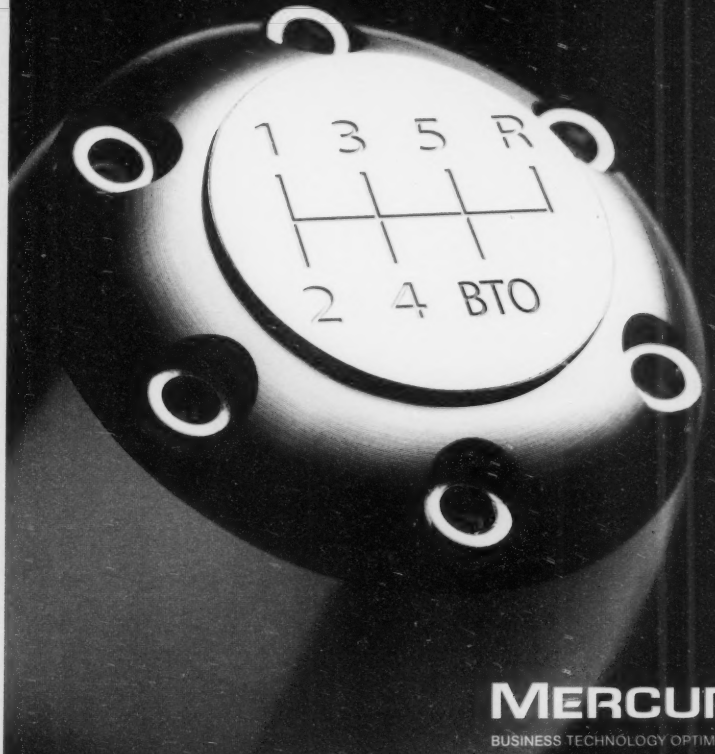
SO, IT'S TIME TO OPTIMIZE I.T. FOR BUSINESS OUTCOMES.



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MANAGEMENT

IT MENTOR

The Change Challenge

If you can't manage change, you can't manage IT, says Ken Karacsony of Toyota Motor Sales. He has some tips to help you guide your business through technology transitions. **PAGE 42**

Career Watch

Jim Lanzalotto of Yoh Services talks about key trends in the IT labor market. Plus, we look at some intriguing theories about what happens to old programmers and examine stats on application outsourcing and job satisfaction. **PAGE 44**

OPINION

Don't Outsource Program Management

You can outsource individual projects, but you should never abdicate responsibility for program management, says columnist Bart Perkins. He explains why you need to keep accountability in-house and tells you how to do it. **PAGE 46**

Not So Fast!

The rush to finish a project is often inversely proportional to the ROI obtained from it. By Mary Brandel

SCOTT NIBAUER

A FEW YEARS ago, Lincoln Financial Group completed a project that was originally given the green light based on its ability to reduce head count within a particular department. The project, which resulted in customer service improvements and other benefits, was deemed a success — that is, until Jason Glazier, chief technology officer at the firm, made an important discovery: No one had ever executed the layoffs.

Oversights like this highlight a major flaw in how projects are managed at many companies, Glazier says: the tendency to neglect important steps at the project's close that can make or break your ability to achieve a full return on investment. While lots of IT and business groups are all over ROI at a project's inception, it all too often slips off the radar as the project is winding down.

For instance, Glazier says, when projects are going through the approval stages, they are often given the go-ahead only when they can demonstrate a clear ROI. But as soon as they're under way, the focus switches completely to staying within budget, and few companies circle back to see if the original ROI expectations were achieved. As a result, it's all too possible for completed projects to appear to be successful based on adherence to schedules and budgets, as well as the delivery of benefits, even if they didn't meet the objectives that drove the original ROI case.

"At no point do you forecast whether you're still on track for your ROI, which means you might not achieve it," Glazier says, "especially if no one goes back and looks."

Lincoln Financial, a $4.6 billion diversified provider of life insurance, retirement products and wealth management services in Philadelphia, has since implemented a process so that all major projects include the step of verifying that the original assumptions were met, Glazier says.

Closing Steps

With the number of projects on many IT departments' plates, it might seem logical, even smart, to finish projects as quickly as possible, wash your hands of them and drive full-throttle

We're constantly looking for ways to spread [an] investment over more functions and expand the usage of it.
Jason Glazier, chief technology officer, Lincoln Financial Group

toward the next one. "Demands are coming in quickly, and the tendency is, 'Get it done, meet the deadline, and move on to the new one,' " says Roger Agee, coordinating business systems manager at Jeld-Wen Inc., a door and window manufacturer in Klamath Falls, Ore.

It's true that many IT departments operate that way, but it's more important than ever to pay attention to a project's ROI, particularly as IT's attention turns from cutting costs to a new wave of innovation.

Many companies don't do project closures very well because they don't plan for them, says Gopal Kapur, founder and president of the Center for Project Management in San Ramon, Calif. It's crucial, he says, for the closing steps to be planned so that you've got the resources — money, time and senior-level staffers — to perform them when the time comes. Otherwise, you may create a functional system that never actually delivers the intended benefits.

"If you said you were going to reduce head count by eight people or eliminate 3,000 square feet of data center space or cut 100 licenses on a software package, who is taking care of doing that?" Kapur asks. "I've seen where people forget to tell the staff in charge of leasing that the contract has to be renegotiated or forget to tell procurement that software licenses have to be terminated."

To close the initial ROI loop, the actual users of the system need to be keenly aware of and enthusiastic about the project's objectives from the beginning, Agee says. Otherwise, when you involve them in collecting the data that measures whether objectives were reached, you'll meet with some blank looks and, very possibly, resistance.

Say the project was intended to reduce the cost of manufacturing a product, and you ask the people on the line to supply the data that measures the "after" picture. "If they don't clearly understand their role and the importance of collecting this information accurately, you won't get the data," Agee says. "Then you have to send someone to figure it out, which is a cost you didn't include in the project, so what ROI you may be getting can disappear."

Revisiting Success

In addition to failing to check on original ROI intentions, a related mistake is to move on before you've churned up all the benefits the project has to offer, says Karen Quirk, research manager at Nucleus Research Inc., an IT advisory firm in Wellesley, Mass.

This is what Kapur calls the "value extraction" stage, which is often skipped because people think of projects as temporary endeavors. "Most organizations disband the project team soon after project implementation, and the project goes into operations and maintenance mode," he says.

Not so at Lincoln Financial. Two and a half years ago, the company implemented Service Broker, a Web-services-based system that syndicates Lincoln-specific content and applications on its partners' Web sites. The project, which cost the company $545,000 and took three developers four months to build, has exceeded its business objectives, according to Glazier. But as the system nears its third year of operation, he still continues to educate the business units on how they might extend the technology to reap even more benefits. "We're constantly looking for ways to spread that investment over more functions and expand the usage of it," Glazier says.

Lincoln Financial's focus on broadening ROI is right on the money, says Quirk. "Use the new technology in all the appropriate places rather than just sinking it into one part of the business and, when a new request comes in, putting in something completely different," she says. "You need to fully examine all the people that can potentially benefit from using it, as well as how far it can be extended to customers and partners."

Although Lincoln Financial's Service Broker project was designed for use by external partners, it quickly became apparent that some functions could benefit the company internally as well. For example, among the many func-

More ROI

Implementation may be completed, but strategic technology projects are never really finished, and concern about the ROI shouldn't stop once you've built the business case. Nucleus Research points out that there are many ways to reap additional benefits from your project investments. For instance:

- **Look for opportunities to add analytics** that can leverage more value out of what you've already got.
- **Extend the platform to other users.**
- **Integrate the project with existing systems.**
- **Review user best practices.** Are the killer features of your killer app the best-kept secrets of a lucky few?
- **Attend user groups and conferences.** These are a great way to find new best practices to make your users even more effective.
- **Get a user wish list.** Many users find after adopting software that it could support their work in other ways they didn't expect with a few minor modifications. A quick brainstorming session could identify more ROI opportunities.

— MARY BRANDEL

Indirect Benefits

WHEN CALCULATING ROI on IT projects, it's just as important to consider indirect benefits as direct ones, according to Nucleus Research. Direct benefits include measures like reduced head count or increased sales, but indirect benefits — which include returns that can't be directly observed, such as worker productivity — account for half of the return on your technology investment, Nucleus says.

Companies that overlook indirect benefits when calculating ROI could end up forgoing a competitive advantage, since indirect benefits can provide real business value. Increased worker productivity, for example, means that employees are doing their jobs in less time, enabling the company to avoid the cost of hiring additional employees.

If you're trying to estimate the proportion of indirect benefits from a proposed project, you should consider three key factors, according to Nucleus:

■ **THE TECHNOLOGY YOU PLAN TO IMPLEMENT.** Some projects, such as implementations of ERP systems, tend to produce direct benefits. Others, such as deployments of collaboration software, portals and content management systems, tend to generate more indirect returns than direct returns. A Nucleus study on document management tools, for example, found that 84% of companies that implemented such systems saw measurable increases in user productivity, whereas less than half reported direct returns.

■ **HOW THE TECHNOLOGY IS BEING APPLIED.** Integration technology could generate more direct returns when used externally rather than internally. For example, automating data exchange with customers would attract more revenue through increased ease of doing business. In contrast, an integration platform used primarily for speeding internal applications may bring mostly indirect returns.

■ **YOUR EXISTING TECHNOLOGY ENVIRONMENT.** Often, the magnitude of indirect benefits will depend on how much of a change the new technology exerts on the existing IT environment.

For instance, in the case of a time and attendance application, companies that have relied largely on manually collecting time for hourly employees will see significant direct benefits by reducing the number of timekeepers. But if the company is just upgrading to a version of the timekeeping system with new auditing and reporting features, most of the ROI will come indirectly, through time savings.

— *Mary Brandel*

tions the system provides is the ability to tag certain files, such as a particular state's tax form or a product prospectus, in a "favorites" file.

"Once we added that, we used it everywhere, such as our internal sites, our director site, our planner's site," Glazier says. "There are all sorts of places to reuse if you expend the effort."

Circling Back

A culture that's looking for these types of opportunities doesn't just happen; it takes work. The Web group at Lincoln Financial holds quarterly meetings to discuss opportunities for reuse, and Glazier himself holds formal and informal meetings with business executives to reinforce the potential benefits of the Web architecture.

"You can't really assume that just because you demonstrated the technology a year ago that they're going to remember it," he says. "You need to tout your success and get additional momentum around the effort."

You can also build momentum by going directly to the users of the new system to brainstorm on additional functionality, Kapur says. In fact, this step should be formally built into the project plan at the outset. "It should be talked about as part of the planning process that four to six weeks after the project has been completed and basic fine-tuning has been done, we will meet quarterly to ask how to get additional value from what is running," he says.

The brainstorming sessions should be led by a trained facilitator, not by IT, Kapur says. Ideas might range from the refinement of a navigation protocol to decreasing the number of steps in a particular process. "The ideas might seem minor," he says, "but if you gather them every two or three months, and each incurs 2% to 3% savings, they progressively add up."

And good ideas should be rewarded, he adds: "If an idea ends up saving the company [money], a certain percentage should be given to the people who came up with the idea."

The important thing, Kapur says, is to create a formal process that enables these ideas to come to light. For instance, create an "ideas portfolio" to collect good ideas, and choose an appropriate person to broadcast ideas about completed or ongoing projects that can be applied to other parts of the company. "If there's no process to capture these ideas, many will slip away," Kapur says. "But at the right organizational level, people will know who else should know about it."

Reining In Ideas

Of course, project management experts usually talk about the opposite problem: trying to rein in projects that keep getting extended by users adding new requirements or developers endlessly fine-tuning or testing. "I see projects that go on and on forever," says Johanna Rothman, president of Rothman Consulting Group Inc. in Arlington, Mass. "It's more a question of how to help people stop."

You can turn scope creep into an ROI opportunity, however, by collecting the ideas that come up midproject and applying them only after the original project is completed, Agee says.

"When good ideas come up, you should write them down and assure people you're going to come back and look at them when the project is finished," he explains. "And when the project is done, milk the ROI through modifications and enhancements."

Clearly, it's time for ROI to become as important to a project's closure as it is to its inception, whether you're closing the loop on the project's original intent or squeezing out extra value after implementation. "It doesn't take as much time as people think," Agee says.

Brandel is a Computerworld *contributing writer in Newton, Mass. Contact her at marybrandel@verizon.net.*

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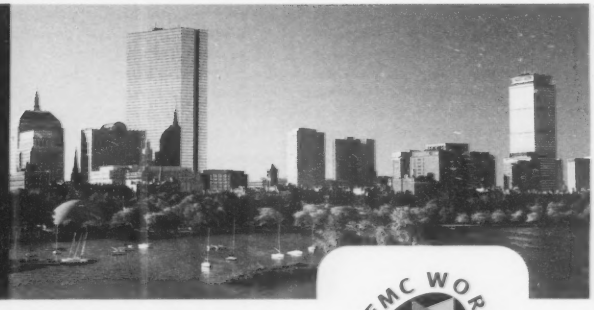

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Surfing THE MOBILE WAVE

The surge in mobile devices swept ahead of many companies' projections. Here's how some CIOs are managing to get on top of it. BY DAVID GEER

AT MANY COMPANIES, internal customers have gotten ahead of themselves — and IT — in the rush for the latest mobile devices, unaware of the challenges they pose. "They don't realize it takes infrastructure, a wireless signal and a whole bunch of things before you can use a handheld," says Hap M. Cluff, director of IT for the city of Norfolk, Va.

For IT, trying to guide the flood of mobile adoption is like trying to channel a tidal wave through a funnel. But CIOs are attempting to quickly identify the best values, limit support and security headaches, and make sure everyone knows the rules.

Whatever it takes to be in touch on the go, businesspeople want it, and they want it now. In fact, employee demand for mobility forced significantly more mobile technology deployment in 2005 than companies had anticipated, according to Ellen Daley, an analyst at Forrester Research Inc. in Cambridge, Mass.

Personal devices and other mobile technologies that IT is unaware of are hard to control and, therefore, hard to secure, Daley says. Mobile hardware can sneak in through departmental budgets, sidestepping IT's scrutiny, and before you know it, they're connected to the network. "That puts a stress on the company from a security perspective [and] a standards perspective," Daley says.

To get ahead of the wave of personal devices, William Lewkowski, CIO at Metropolitan Health Corp. in Grand Rapids, Mich., discourages the proliferation of a variety of devices in favor of a few that are easily supported. For example, IT supports the Palm operating system on handheld devices. Employees may use other software, he says, but they must go through IT to make sure it will work. And for security's sake, employees are allowed to download to their handhelds only low-risk information, such as their schedules.

Other companies base their approaches to mobile devices on need. For example, at Ford Motor Co., senior executives have a demonstrable need for BlackBerries, says Vijay Sankaran, IT manager for enterprise technology. "These people go from meeting to meeting," he explains. With a BlackBerry, they can scroll through their e-mail and calendars and use phone features without going back to their desks.

Sankaran says the number of things you can do with a BlackBerry is very limited, making it more secure from a corporate IT standpoint. The more features, capabilities and services a device has, the more security holes that it comes with, he explains.

Some CIOs use the power of the purse to keep mobile devices under control. "We don't allow our associates to bring in their own equipment," says Patrick Law, vice president of infrastructure at American Modern Insurance Group Inc. in Amelia, Ohio. Personal cell phones, which can't connect to the company network, are the exception. Anything else has to be acquired through the help desk.

COST VS. VALUE

Cost is an issue, but there are ways to rein in the costs of mobility while increasing its value. For example, American Modern lets employees sign up for their own cell phone service plans using whichever companies they want because the local cell phone companies provide much better signals than nonlocal ones, Law says. He reimburses them for basic service as well as for features that add business value.

For example, an instant text-messaging feature comes in handy for adjusters, who may be on the phone when someone needs to get through to them with important information. With that feature, they can stay on the line and get the information at the same time.

Law says that the most reliable, practical and cost-justifiable mobile devices are PDAs, smart phones and BlackBerries. "When we get beyond those devices, it doesn't seem to be cost-justifiable," he says.

Service is also costly, and it's difficult for the help desk to provide expertise over a range of devices. When few support staffers know the hardware, it's hard to have a mobile expert available on every shift, Daley says. And users seeking tutorials on new equipment can boost call volume.

Some CIOs are meeting this challenge head-on by training everyone on their support staffs on mobile technologies, says Daley. Others try to head off the volume by using self-service support Web sites with messages such as, "If you have a Palm Treo 650, try this before you call technical support." Law's group provides employees with "cheat sheets" for each device to help them with the basics.

Buying additional devices for key people can improve support efficiencies as well. For example, Cluff purchases BlackBerries for technicians so they can become thoroughly familiar with them.

The approach has also provided an unforeseen benefit. The rationale was to get BlackBerries for the technicians so they could support the customer, Cluff says. But it turns out that the devices are also helping them be more productive in their work.

Geer is a freelance writer in Ashtabula, Ohio. You can contact him at geercom@alltel.net.

MOBILE TACTICS

Here are some policies CIOs are using to get ahead of the wave of personal mobile devices:

Connectivity. Nothing will be connected to the network without the approval of IT.

Approved equipment. IT provides a list of approved devices and software. Others will not be supported.

Desktop standards prevail. Mobile policies mirror desktop policies where appropriate. For example, if laptops automatically log out users after 20 minutes to prevent theft or fraud, mobile devices will be programmed to do the same.

Disabling mechanisms. Mobile gadgets will be fitted with disabling mechanisms that can be remotely activated in case of loss or theft.

—David Geer

COMPANIES ARE ADOPTING MOBILITY FASTER THAN PLANNED

TECHNOLOGIES	2004 PLANS*	2005 DEPLOYED**
Wireless e-mail or BlackBerry	39%	51%
Personalized contacts and calendar	30%	56%
Content/information for employees	23%	44%
Sales force applications	20%	30%
Field service applications	20%	26%
Customer-facing applications	18%	28%

BASE: *675 decision-makers at North American companies
**292 telecom decision-makers at North American companies

SOURCE: FORRESTER RESEARCH INC., APRIL 2004 AND MAY 2005

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KEN KARACSONY says spending extra time in the project planning stage can reduce risks later.

The Change Challenge

No matter how good your IT group is technically, if you can't manage change effectively, you can't be successful. **By Ken Karacsony**

IT MENTOR

CHANGE IS inevitable, especially in IT. A company can't continue to rely on the same technology that was successful yesterday and expect to be competitive today. It's vital that the CIO and the management staff search the horizon for the latest technology, and they must also have an intelligent strategy for implementing change.

The challenge for IT is to successfully manage change in a rapidly evolving environment. Here are several common challenges that I believe you must understand and manage in order to facilitate change:

Company politics. Understanding the political tenor of your organization is imperative if you are to foment change successfully. I find that, in general, the level of corporate politics is directly related to the size and age of the company. The larger and older a company, the greater the political gamesmanship. But every company has some measure of politics.

If you suspect that the powers that be are change-averse for political reasons, think about the dynamics of listening: How many times have you tried to tell family members something, only to have it fall on deaf ears? When someone outside the family makes the same suggestion, your family listens and responds while you scratch your head.

This rule also applies to corporations. People are more inclined to listen to the voice of an outsider than to that of a company employee. For that reason, I find that engaging consultants is an excellent way to neutralize company politics and initiate change. Consultants are not expected to play politics and generally have an easier time being honest and forthright. Since co-workers don't have an emotional connection to the consultant, they are more inclined to listen and be receptive to the recommendations that are given.

Degree of change. It is important to know where your company is on the technology scale and understand exactly what change you hope to implement. The bigger the change, the harder the road to success and the more fraught with danger the journey.

Moving from an object-oriented architecture to a service-oriented architecture, for example, isn't too much of a jump. But attempting to implement a service-based architecture when the current state is Cobol on the mainframe involves a high degree of risk.

In situations that require a major uplift to a radically new technology, take extra time in the planning phase. Spending the time and money upfront will significantly reduce risks later as the project moves ahead.

You must also reassure staffers that they will be given the appropriate training and support to acquire new skills if necessary. For example, if the bulk of your programmers are Cobol-literate and the company is moving to Java, alleviate the programmers' insecurity by investing in training.

Senior management support. Like water, change flows much more easily downhill than uphill. Attempting to initiate change from the bottom or even from the middle is difficult. When upper management is fully engaged and supportive, success is far more likely. If you are a lower-level manager with an idea for change, look for an upper-management sponsor to help you sell the idea, gain consensus and circumnavigate roadblocks.

Another way to gain support is by proving the value of the change. If you can show, for example, that implementing new technology will save money, you will surely capture the attention of your upper-management audience.

Success of past technology uplifts. The more successful you've been in the past, the easier it will be to sell the latest initiative. If past efforts failed or were only marginally successful, you'll need to work hard to regain credibility and trust.

I once worked for a company that decided to retire its mainframe and implement an open systems architecture. It was a rocky road. The costs and time frame far eclipsed the estimates. Worse yet, the functionality IT promised was not delivered because of cutbacks in the original scope of the project.

From that point on, IT was under constant scrutiny. We had to work especially hard to convince executive management to approve virtually every new initiative, regardless of the size.

If this sounds like your situation, you can expect to do a great deal of work for every change you want to initiate. You may wish to hold off on major changes until you have regained respect through small wins that provide clear value and high visibility. Once you have a few of those under your belt, you can go for the big win.

IT organizations are in a constant state of flux, and the big question that IT faces is how to successfully implement change. I hope that these suggestions will help your organization deal effectively with an ever-changing IT landscape.

If you have discovered other ways to deal with change or have any questions, I would love to hear from you.

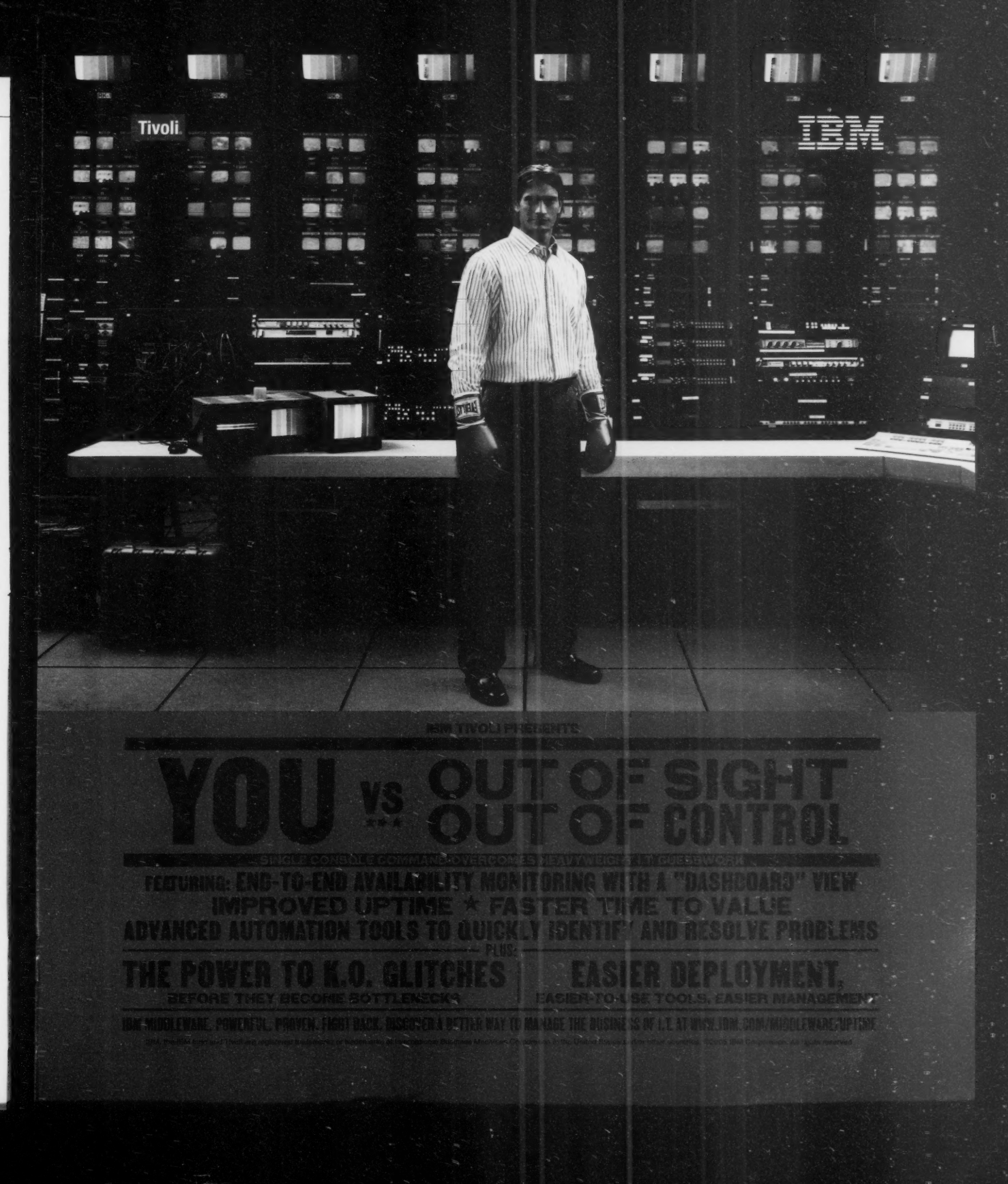
Do's & Don'ts

DO
- Involve all staff from the beginning.
- Communicate the reason for the change often.
- Address concerns as they arise.
- Explain the benefits of the change.
- Reassure staffers that they will not lose their jobs.
- Explain that training will be provided to ensure that everyone can perform successfully.
- Reassure staffers that there will be support after the "go live" date to help with problems.
- Explain that management recognizes the learning curve for staff and will adjust expectations accordingly.

DON'T
- Use threats.
- Discount the resistance.
- Apply pressure to conform.
- Fail to recognize people's concerns.
- Stop communicating.

– KEN KARACSONY

Karacsony is a senior data analyst in the Enterprise Data Management Group at Toyota Motor Sales Inc. Contact him at ken.karacsony@verizon.net.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Career Watch

Jim Lanzalotto

TITLE: Vice president of strategy and marketing

COMPANY: Yoh Services LLC, Philadelphia

Q&A

Demand for U.S. IT workers continues to show strength, with 41% of organizations planning to add to their IT staff head count this year, according to an exclusive survey of 338 IT executives recently conducted by *Computerworld*. In fact, some employers find themselves competing for workers who have specialized skills, says Lanzalotto. *Computerworld*'s Thomas Hoffman spoke to Lanzalotto about some of the trends he's seeing in IT hiring.

What are the key trends you're seeing in the IT labor market? Right now, the market as a whole is trending toward high-impact talent. The skill shortage on highly specialized jobs is more acute than at any time before. Customer requirements are becoming much more specific. The requirement used to be, "Give me a good CRM developer." The requirement now is, "Give me a good CRM developer with specific experience in the pharmaceutical industry."

How is this affecting compensation? Tech wages were up 2.7% in July, 1.1% in August and down 0.4% in September. Why? I think it reflects a typical summer lull, and September was a pretty tumultuous month, with two major hurricanes and a major hike in gas prices. Employers and the whole market reacted in general to what was going on.

What skills are in biggest demand right now? The highest demand is for Oracle DBAs, who are being paid $54.73 per hour. Database architects are commanding $60.53 an hour; clinical data managers, $43.79; and embedded developers, $57.67 per hour.

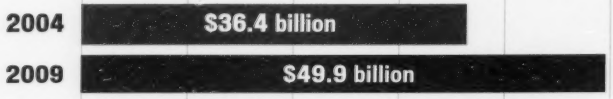
What's driving this demand? Optimization of existing IT investments. Say a company implemented Oracle Financials. There are significant investment and people costs and time devoted to this. Companies want to make sure this is optimized as much as possible, and the need for data administrators to assist with this optimization and provide that value is more critical than ever.

What types of positions do you expect to be in strong demand in the first half of 2006? A couple of things. Roles around Sarbanes-Oxley will continue to be in demand. ERP is going to be a very solid market through 2008 as companies look to develop and enhance relationships with existing customers. There will also be strong demand for folks with vertical industry expertise, like SAS data managers in the medical market.

PAGE COMPILED BY JAMIE ECKLE.

Application Outsourcing to Rise

Gartner Inc. projects that the worldwide application outsourcing market will grow at a compound annual rate of 6.5% between 2004 and 2009, reaching nearly $50 billion.



SOURCE: "GARTNER ON OUTSOURCING, 2005," DECEMBER 2005

Old Programmers Never Die; They Just Can't C as Well

AN INTERESTING THREAD was spun on Slashdot last month, as various and sundry readers responded to a Dec. 16 query from "Cliff," who noted that at his large international company, nearly all of the programmers are under 40. "Those that are over 40," he wrote, "tend to be in either management or IT support! I was wondering, where do all the old programmers go? They can't all end up in management. I know we don't get paid enough to take early retirement. Is there some other career that tends to attract 40-plus-year-old programmers? If so, I'd like to know, because I'm not that far off from 40 myself!"

While several people recalled 40-plus programmers who had been inspirational mentors for them, a few contributors contended that these programmers don't work for large companies. "By that point in your life," said "Kawika," "you've learned enough to know that big companies move slowly and make dumb decisions. By age 40, you've either moved into management to participate in the stupidity, or you've left for a small company or consultancy." Some said all over-40 programmers are in the public sector, and others pointed to themselves as examples of middle-aged programmers who have gone on to new careers in fields such as law.

And what's a Slashdot thread without a few smart-alecky responses thrown in? According to the very first response in this thread, "They're all in sanitariums, driven insane by debugging assembler for countless hours." A few people seemed to have visions of *Soylent Green* in mind. Said one, "40-year-old programmers are recycled into yummy treats called cheetos and fed to proto-programmers. It's the circle of life." And from that same fellow who thought old programmers are in straitjackets: "You ever hear of Mountain Dew? It's old programmers, I tell you! Mountain Dew is old programmers!"

– *Jamie Eckle*

IDLE HANDS

For the second year in a row, employees who have too little work were less satisfied with their jobs than those with too much or just the right amount of work, according to the latest workload satisfaction survey by Sirota Survey Intelligence in Purchase, N.Y.

AMOUNT OF WORK	AVERAGE JOB SATISFACTION (out of 100 points) 2005 SURVEY
ABOUT RIGHT	68
TOO MUCH WORK	60
MUCH TOO MUCH WORK	52
TOO LITTLE WORK	43
MUCH TOO LITTLE WORK	37

SOURCE: SIROTA SURVEY OF 203,000 EMPLOYEES

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8:30am – 8:40am	**Introduction and Overview**
8:40am – 9:30am	**Market Outlook and Trends** Jean S. Bozman, Research Vice President, IDC
9:30am – 10:00am	**IT End-User Case Study**
10:00am – 10:15am	**Refreshment and Networking Break**
10:15am – 10:45am	**Slashing Cost and Complexity with Open Source Software and Commodity Hardware** Dan Agronow, Chief Information Officer, The Weather Channel Interactive (TWCi)
10:45am – 11:15am	**IT End-User Case Study** Gary Greenwald, Chief Technology Officer, Ameritrade
11:15am – Noon	**Panel Discussion: Creating an Agile Enterprise IT Architecture is Easier Said than Done** This panel of CIOs discuss strategies, tactics and lessons learned on the front lines of re-architecting their IT infrastructures to support ever-changing business requirements and enable faster, better business performance. Moderator: Julia King, National Correspondent and Executive Editor, Events, Computerworld Panelists: Dan Agronow, Chief Information Officer, The Weather Channel Interactive (TWCi) Gary Greenwald, Chief Technology Officer, Ameritrade
Noon	**Program Concludes**

Selected speakers include:

Jean S. Bozman
Research Vice President, IDC

Dan Agronow
Chief Information Officer, The Weather Channel Interactive (TWCi)

Gary Greenwald
Chief Technology Officer Ameritrade

Julia King
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Presentations include business process outsourcing as a strategic business tool, integrating BPO as part of the corporate outsourcing strategy, scoping the right deal, achieving business value through governance, the evolving legal landscape in BPO, offshoring vs. global sourcing, the viability of multifunction BPO, and the strategic role of procurement.
www.idc.com

Business Intelligence

March 6-8, Chicago
Sponsor: Gartner Inc.

Tracks in the Business Intelligence Summit include business and strategy (the CIO's view of BI, corporate performance management and getting value from information assets), technology and implementation (BI competency centers, poor-quality data and analytics), and best practices and the market (the business case for BI, negotiation with vendors and developing the right metrics).
www.gartner.com

Semantic Technologies

March 6-9, San Jose
Sponsor: Wilshire Conferences Inc.

Semantics is the study of meaning. Semantic technologies seek to clarify the meaning of data to make it more useful. Topics at SemTech include a semantic-aware network architecture, usage patterns in document management systems, semantics in grid computing, and building a virtual knowledge layer for enhanced semantic mining.
www.semantic-conference.com

Medical Technologies

March 12-16, San Francisco
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Sessions include changing industry dynamics, medical technology investments and value analysis, best practices, peer councils for buyers and sellers, translating requirements, and integrating technology and effective R&D deployment.
www.frost.com

BART PERKINS

Don't Outsource Program Management

A LARGE program consists of related projects that must be designed, managed and coordinated as a single entity in order to achieve the optimal outcome. Today's IT organizations are developing fewer large programs in-house and buying more outside. This is increasingly due to necessity. After budget-squeezing, downsizing and outsourcing, many firms no longer have enough staff (or the right skills) to deliver on a grand scale.

When corporations need to undertake large programs, their IT organizations often outsource the majority of the tasks. It may be tempting to also outsource program management, but this function is critical to success and should never be outsourced.

Consider, for example, a new reservations system. It contains many separate projects: resource acquisition, marketing, development, customer support, rollout, maintenance and so on. Effective program management of these disparate projects is required for program success. While any or all of these projects may be successfully outsourced, the program management function should never leave your company. In addition, unless you and your outsourcer operate at Capability Maturity Model Level 4 or 5, you should have a "mirror" project manager on your staff. This is especially true when parts of the program are being sent offshore, which increases program complexity.

Moreover, many large programs involve changing internal organizational structures and business processes. You and your co-workers have a better understanding of these (and your company's culture and business needs) than any outsider can have. Also, you and your team are more motivated to make your program succeed than any outsider, since your long-term success is tied to the program's success.

BART PERKINS is managing partner at Louisville, Ky.-based Leverage Partners Inc., which helps organizations invest well in IT. He was previously CIO at Tricon Global Restaurants Inc. and Dole Food Co. Contact him at **BartPerkins@LeveragePartners.com**.

A program is most likely to be successful when the people who develop and manage it are ultimately accountable for its operation and overall performance. Never outsource responsibility for the success of a program. Keeping its management in-house will enable you to obtain the following advantages:

Dedicated resources. Using your own staff prevents the outsourcer from reassigning "your" program manager to another customer or shifting much of the program management to junior staffers without your knowledge.

Undivided loyalty. An internal program manager's loyalty is to you and your organization, since you provide pay, performance reviews and promotions.

Clear process ownership. You, not your outsourcer, maintain control of the business processes that run your company.

Timely problem resolution. When problems arise, your own staff can often get management cooperation more quickly, with less bureaucratic overhead between corporations.

Managing large programs is no small undertaking. It requires time, effort, people and money — as much as 15% to 18% of the total program budget. Moreover, it requires specialized program-management skills that many companies simply do not have.

If your organization lacks the necessary program-management skills, don't acquire them from an outsourcer. Instead, rent them from a boutique consulting firm that specializes in program and project management. These boutiques are known for successfully managing large programs, particularly those that are in trouble. Hire a specialized consultant from one of these firms to augment your internal resources. Boutiques offer advantages over using an outsourcer's program manager, including the following:

Multi-industry perspective. Boutique firms have worked in many industries and offer advice from a unique vantage point. Most outsourcers have staffers who specialize by industry and lack similar breadth.

Objectivity. Since they are unencumbered by the politics of either organization, boutiques can be objective and unbiased.

Accurate assessment. Consultants provide an independent source for measuring program progress and determining whether program acceptance criteria have been met.

Tie-breaking vote. When you and your outsourcer disagree, a consultant can mediate objectively and help break unproductive standoffs.

Early warning signals. Your program manager must honestly report problems and program status. The earlier a problem is detected, the more options you have for solutions. Outsourcers may delay bringing bad news, fearing that they will lose a client. Your own staff may fear political retribution for failure. An unbiased third party can protect your organization from being blindsided at the last minute.

As IT builds less and buys more, effective program management becomes increasingly critical to the success of your programs and ultimately to the success of your company. If you allow your outsourcer to also serve as your program manager, you lose your leverage and allow accountability for the program to drift outside your company. Augment your resources; don't abdicate your responsibility.

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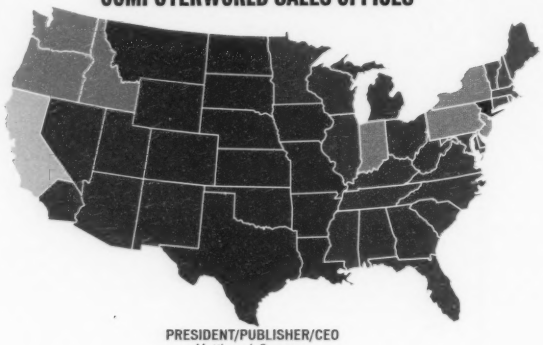

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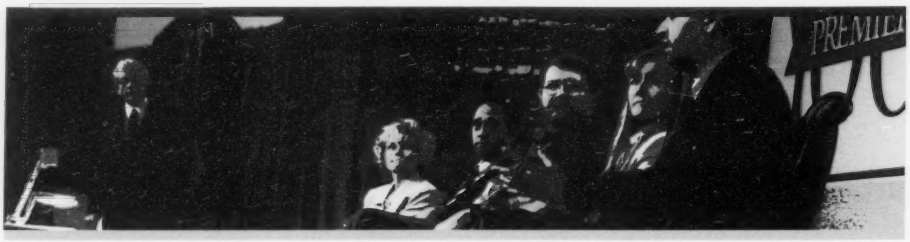

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Wireless

embedded chips that let users connect to Cingular Wireless LLC's 3G wireless data network. That followed a flurry of similar announcements late last year by vendors such as Dell Inc., Hewlett-Packard Co. and Vodafone Group PLC.

The growing number of wireless options has left some IT managers grappling with the question of whether a feature like a 3G wireless radio device inside a notebook PC would even be beneficial for their staffers and end users.

"I don't find the choices confusing, just limiting," said Irving Tyler, CIO at Quaker Chemical Corp. in Conshohocken, Pa. For example, Tyler said the ability to use an advanced wireless data network from a radio embedded in a laptop could be a good idea — provided the equipment could find the best signal available and maintain the connection across different channels, similar to the multiband cell phones carried by many international travelers.

Potential Benefits

Embedding 3G in notebooks could simplify management and administration tasks, said Ben McLaren, technology services manager at Baptist Health System Inc. in Jacksonville, Fla. McLaren recently met with a sales representative from Panasonic Corporation of North America to talk about upcoming products with 3G.

"They say it could drive down costs, and we're always interested in that," he said. But the embedded technology would make it harder to switch carriers, McLaren added.

Analysts noted that all of the recently announced PCs with embedded 3G support are designed to work with just one carrier's network.

"The difficulty is that once you buy a notebook with a 3G radio built in, you're stuck," said Jack Gold, an analyst at J. Gold Associates in Northboro, Mass. Swapping out a 3G chip and replacing it with another one could be "prohibitively" expensive, Gold said.

"I don't find [wireless] choices confusing, just limiting," says IRVING TYLER.

Gartner Inc. anticipated the 3G issue last summer, when it released a report advising companies to avoid buying PCs with integrated 3G equipment "unless you really need them."

Users will have to pay monthly fees to mobile network operators for 3G-enabled notebooks, "regardless of whether they are used for mobile communications," Gartner said in the report. The firm instead recommended that IT managers buy 3G modem cards for their PCs.

PC makers and vendors of embedded 3G devices defended the new technology. For example, Sierra Wireless Inc. in Richmond, British Columbia, claimed that embedded 3G provides greater ease of use and more powerful antennas than removable devices and is less prone to damage.

3G modem cards are sold by carriers on two- and three-year subscriptions, the same as internal devices, said Trent Punnett, vice president of marketing and product management at Sierra Wireless, which sells modem cards as well as embedded devices. The only advantage to a modem card is the ability to move it between machines, Punnett said.

Gartner analyst Ken Dulaney said that notebooks with built-in 3G will sell, despite the concerns cited in last summer's report. But the biggest wireless-related question for IT shops continues to be how to assess 3G against Wi-Fi and newer technologies such as WiMax, Dulaney and other analysts said.

"For the next few years, there's going to be no dominant wireless technology, and some organizations will have to have it all," with groups of end users favoring different protocols, Gold said. "There will be a lot of confusion."

The lesson for IT managers is that they need to remain flexible, he added. "Most IT guys want to throw up their hands and say, 'Don't bother me with this wireless stuff,' but they can't," Gold said.

Craig Mathias, an analyst at Farpoint Group in Ashland, Mass., said there is an enormous need for technology that can help users converge the various wireless protocols. "We're still in an unconverged environment, and it's like the Wild West," he said.

Tyler agreed and called on vendors "to take more responsibility for working together and solving the intratechnology movement issues."

Continued from page 1

Drug Tracking

provide a so-called electronic pedigree system that can track drugs through the supply chain. A similar California law goes into effect Jan. 1, 2007.

While Pfizer is adding RFID tags to all packages of Viagra sold in the U.S. so that pharmacies and wholesalers can verify the authenticity of the drug, the application can't track and trace medicines through distribution channels in accordance with the laws.

In a statement, Pfizer said that extending its RFID program to comply with the e-pedigree laws would require that all parts of the supply chain invest in compatible technology. Each part of the chain would also have to agree to capture and share information about product movement, the statement said. Pfizer said it will further explore its use of RFID technology this year.

Despite facing deadlines to meet the Florida and California requirements, many other pharmaceutical firms have also been slow to create systems that can generate a pedigree, said Laura Ramos, an analyst at Forrester Research Inc.

"They have a public position that whatever the legislation is, they will meet" the requirements, she said. "Behind the scenes, they are scrambling."

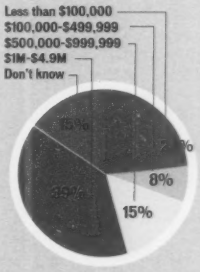
In a September Forrester study, Ramos reported that a survey of executives at 20 pharmaceutical and wholesale drug distributors, which account for 80% of drugs sold worldwide, found that none had yet built a pedigree system. The survey further found that seven of the companies had done no work on electronic pedigrees and that none of the remainder had moved past the early phases of such projects.

Tom Loane, vice president and CIO at Teva Pharmaceuticals Industries Ltd.'s North American division in North Wales, Pa., said his company is still studying the issue and defining a strategy. "We do not yet have a plan," he said.

Ronald Bone, senior vice president of distribution support at McKesson Corp., the largest pharmaceutical distributor in the U.S., said his company is integrating its warehousing system with an undisclosed software package to comply with the Florida legislation.

E-PEDIGREE SPENDING

What is the approximate cost of all technology and services purchased for e-pedigree to date?



BASE: 13 respondents whose pharmaceutical companies are currently involved with e-pedigree

SOURCE: FORRESTER RESEARCH INC.

The software, from a vendor Bone declined to identify, will allow San Francisco-based McKesson to capture lot and invoice data from the manufacturer. It will then send that on to the customer electronically, along with a digital signature that the customer can use to confirm the integrity of the product, Bone said.

The company projects that the e-pedigree system, which cost "millions of dollars" to create, will be in production by March, he added.

McKesson expects to one day turn to RFID technology to create a next-generation e-pedigree system, but it must first wait for the maturation of standards for attaching RFID tags to pharmaceutical products, Bone said.

FFF Enterprises Inc., a Temecula, Calif.-based distributor of blood plasma products and vaccines, is planning to use electronic pedigree software from SupplyScape Corp. to meet the requirements. The system is expected to be operational in April, said Patrick Schmidt, president and CEO of FFF.

Since 2003, FFF has given consumers access to its Web site, where they can view pedigree information, he said.

The new system will cost about $500,000, he added.

Schmidt said the system "adds additional steps for the health care provider and the supplier to verify transactions that only take place between us and [the] manufacturer."

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FRANK HAYES ■ FRANKLY SPEAKING

Obsolete Defined

IN THE WAKE OF Microsoft's early release of its patch for the WMF problem, lots of Windows users are unhappy. They complain that Microsoft's patch is designed for Windows XP and 2000, not Windows NT, ME, 98 or 95, even though those operating systems are also vulnerable and tens of millions of copies are still in use. Of course, we all know why Microsoft didn't patch those older Windows versions: They're obsolete.

Hewlett-Packard's midrange MPE operating system is obsolete too. Anyway, that's HP's story. MPE users, several thousand strong, believe MPE still works just fine. In December, HP agreed to extend support for those users for three more years.

Obsolescence is a much more slippery concept than it first appears.

That shouldn't be a big surprise. Vendors call something obsolete when they can no longer make money selling it. IT shops say the same thing isn't obsolete until we can no longer make money *using* it — or maybe just until it no longer fits into our corporate IT architectures.

And end users, the people at their desks? Many of them believe a familiar IT system isn't obsolete until the pain involved in getting it to do what's needed is a lot greater than the pain of migrating to something new.

Still profitable, still useful, still bearable. Whose definition of *obsolete* is right? All of them. And they interact. When a vendor declares that a venerable product is going end-of-life, it's likely to be tagged for removal from corporate IT's plans. But users don't like that. Change means disruption. They push back against IT. IT pushes back against the vendor. And obsolescence gets redefined again.

Obviously, IT is in the middle. And we understand why vendors want to push out new products. It's about money: from upgrades, from customers captured from competitors, maybe even from a whole new customer set.

We have a little more trouble understanding why users are so willing to stay with aging products for so long. Sure, there's money involved. And OK, the old stuff is familiar and comfortable. But IT deals with change all the time. We learn new languages, master new systems and figure out new technologies on a regular basis. We accept that it's just part of the job. Why won't users?

Because for them, it's about pain, remember? And not just the existential pain of change. A new system means users will lose their habits — the well-memorized procedures and tricks and shortcuts that let them do business while paying minimal attention to the technology. Users don't care that hardware or software is obsolete. But they do care when their habits hit the junk pile.

That's what hurts for them. That's why they'll put up with a lot before giving up some old systems as obsolete.

How can we help them redefine obsolescence? By paying attention to pain. Training won't be enough to get users fully up to speed on a new system — we know that. But we can watch and listen. We can collect new tips and shortcuts and work-arounds from enthusiastic power users, and pass those along to other users. Everything we do to make the new system less painful will help.

And before that, everything we can do to make clear *our* pain with the old system will help too. Users don't see the cost and effort required to keep some older systems alive. And they won't know about it until we explain it to them. Just as we don't know how crippling the loss of their old habits is until we start paying attention.

That way, working together, we can decide what's obsolete — and then move beyond it.

And dealing with vendors? That's much easier. Just as users are about pain, vendors are about money. To negotiate a new meaning for obsolescence with them, we'll have to show them some green — eventually — and they'll have to make it worth our while.

That's a part of the IT business that will never be obsolete. ▸

FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at **frank_hayes@computerworld.com**.

Wrong? What's That?

Pilot fish gets call from enraged manager who's trying to give a presentation and print out copies at the same time – and nothing's working. "We rushed to the conference room to find that he had plugged both ends of multiple network cables into the small network switch on the conference table, thereby creating a loop and tying up the segment for all," says fish. "After describing the situation, fixing it and letting him know what would happen if he did this, he stated the following: 'I did it to help speed up the network. You guys should have something that detects this anyway.' We said 'You're welcome' and awaited his next boneheaded move."

SHARK TANK

Whatever Works

Military base has its first network-threat exercise requiring all PCs to be shut down, reports a pilot fish who's seen this all before at another base. As usual, when the exercise is over, the commander in charge of the base's networks calls the network control center with instructions to send out an e-mail telling users they can turn their PCs back on. "A secretary politely informed him that those of us with our computers turned off won't get the message," says fish. "Without missing a beat, he told the control center to issue the announcement over the public address system, too."

Define 'Good'

Factory uses these aging printers to print labels for cases or products. But they keep breaking down, says a pilot fish on the scene. "Parts are very expensive and hard to find," fish says. "Every time, IT manager suggests replacing the very old and worn-out printers. The plant manager always agrees and sends request up to the company general manager, who says, 'No, keep fixing them.' " And what does the GM say when he's shown that the replacement cost is less than the annual repair cost? "As long as we can keep fixing them, we will. No sense in disposing of good equipment."

Back Into the Swing of Things

After a two-week holiday shutdown, sales guy is having trouble with a Web application he normally runs several times a day. "Every time I go to the screen, it submits another request instead of recalculating my net price," he tells database admin pilot fish. Hmm, says fish, tell me exactly what you're doing. "I enter the quote number and my percentage, then click the 'request' button," says sales guy. Fish: See the "calculate" button? Try that one instead. Sales guy: "Oh. I guess the holidays were too long."

SHARK'S STILL RECOVERING TOO. So send me your true tale of IT life at **sharky@computerworld.com**. You'll get a stylish Shark shirt if I use it. And check out Sharky's blog, browse the Sharkives and sign up for Shark Tank home delivery at **computerworld.com/sharky**.

How to light up a supply chain.

Advance Transformer, a leading component manufacturer for lighting systems, had legacy IT systems that no longer kept up with production demands. They turned to HP to better manage their supply chain. Now, using an IT Service Management approach with HP OpenView software and HP BladeSystem servers, their systems automatically solve problems as they occur. All this has reduced production time from 28 to 5 days, cut inventory levels by 50% and revealed the bright side of change. www.hp.com/adapt

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